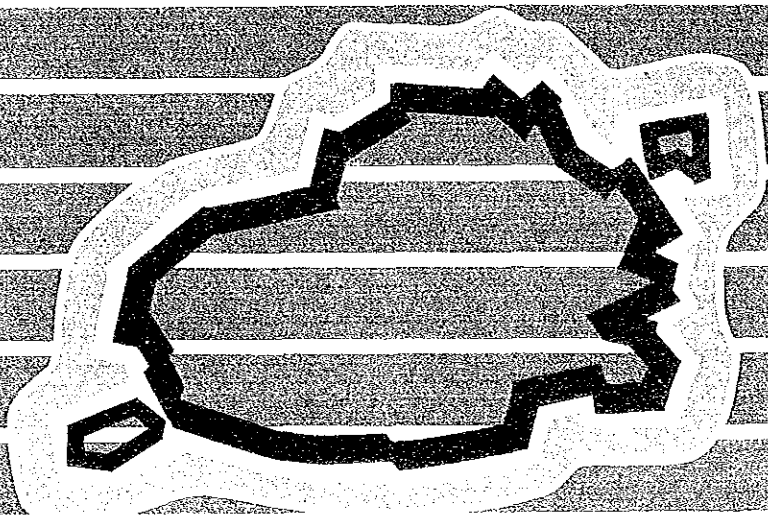
No. 67

Republic of the Philippines

Master Plan Study of Bohol Integrated Area Development Project



FINAL REPORT

February 1990

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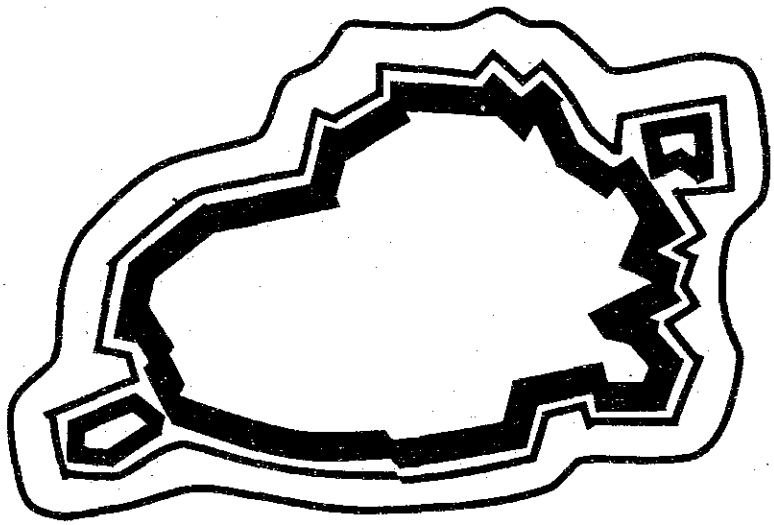
Republic of the Philippines

Master Plan Study of Bohol Integrated Area Development Project



FINAL REPORT

February 1980

JAPAN INTERNATIONAL COOPERATION AGENCY

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P R E F A C E

In response to the request of the Government of the Republic of the Philippines, the Government of Japan has decided to conduct a survey on the Master Plan of Bohol Integrated Area Development Project and entrusted the Japan International Cooperation Agency (JICA) to carry out the work. The JICA dispatched a survey team headed by Dr. Hidetoshi Matsuo, the special adviser to Pacific Consultants International and Mitsubishi Research Institute Inc., consisting of 14 experts in relevant fields from July 10 to September 29, 1979. The survey team conducted a reconnaissance study, collected the necessary data and information, and exchanged views with the Philippine officials concerned.

After completing further studies and taking into consideration the comments of the Philippine officials concerned, the survey team has compiled this Master Plan for the Bohol Integrated Area Development for submission to the Philippine Government.

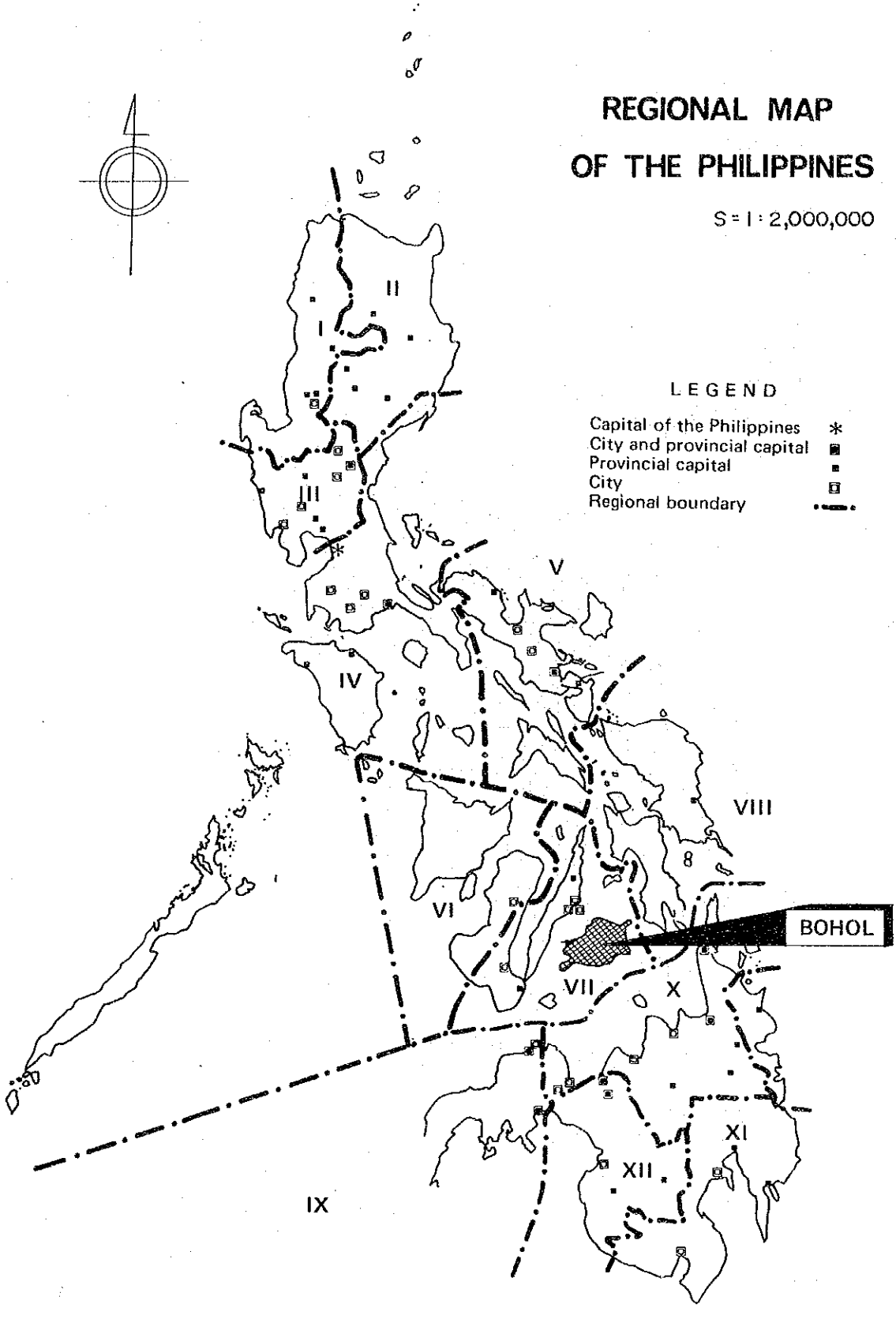
I hope that this report will contribute to the integrated area development of the Bohol province of the Republic of the Philippines.

I wish to express my sincere appreciation to the Philippine officials concerned for their whole-hearted cooperation and courtesies extended to the survey team.

February 1980

Keisuke Arita

Keisuke ARITA
President
Japan International Cooperation Agency


REGIONAL MAP
OF THE PHILIPPINES
S = 1 : 2,000,000
LEGEND
Capital of the Philippines
City and provincial capital
Provincial capital
City
Regional boundary
I
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III
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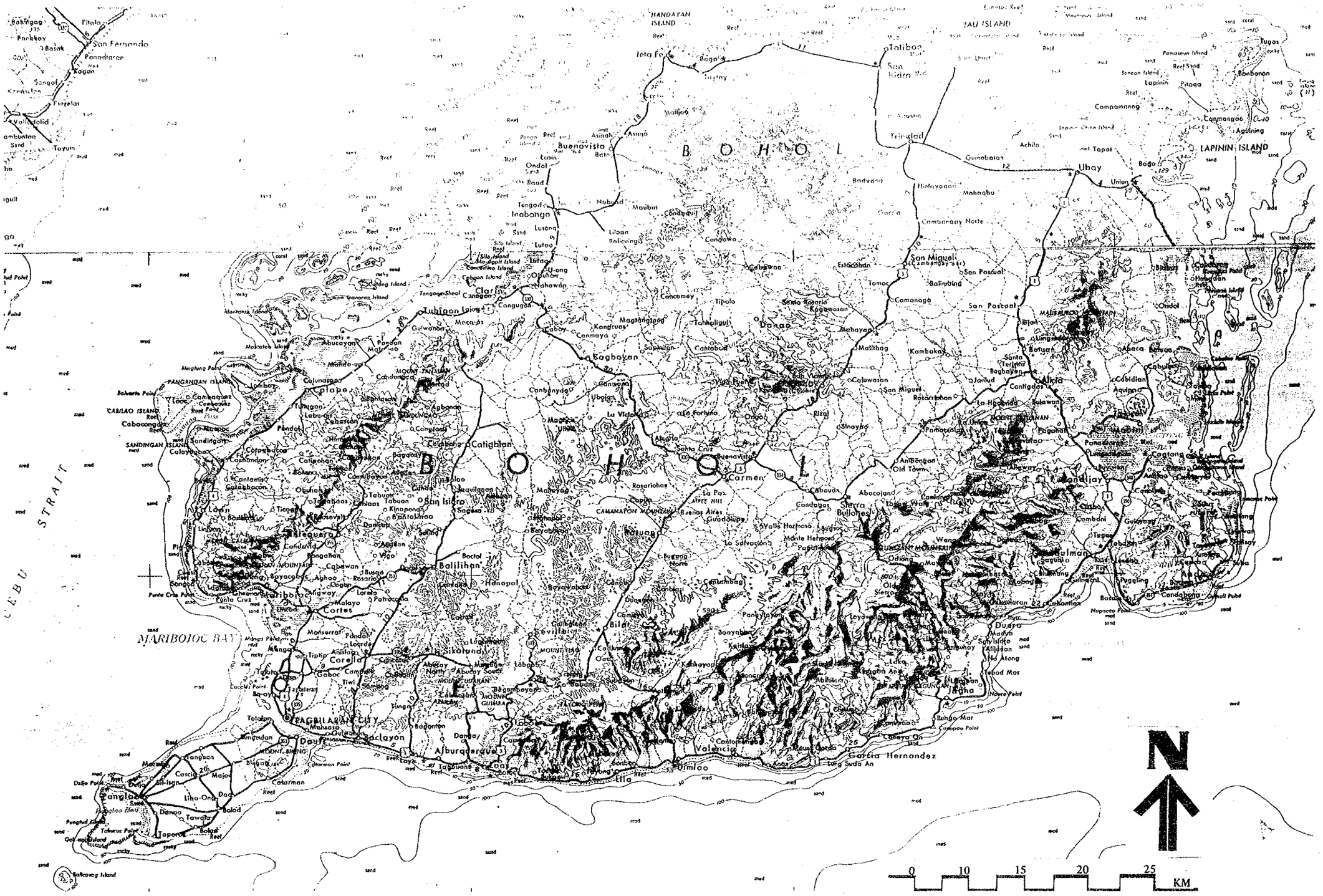
BOHOL



MAP OF BOHOL PROVINCE

BY THE PHILIPPINE COAST AND GEODETIC SURVEY

SEPTEMBER, 1979

ACKNOWLEDGEMENT

We, members of the JICA Study Team for the Bohol Integrated Area Development Project, all wish to express our deep sense of gratitude to all the concerned officials of the government of the Republic of the Philippines, the Provincial Government of Bohol and Administrative Officers of Region VII, for their kind advice and warm hearted cooperation and hospitality. Without their assistance and contribution, the study would never have been accomplished. In particular, we wish to thank his, Excellency, the Governor of Bohol Province, MR. ROLANDO G. BUTALID.

Special acknowledgements are also due to those in the National Council on Integrated Area Development (NACIAD) for overall arrangement and closest cooperation given to the Team: MR. ISRAEL CARLOS, Director, Program Planning and Development Department (PPDD); MR. HERMAN ONGKIKO, PPDD; MR. MAURICIO FELICIANO, PPDD; MR. MEYNARDO SANTOS, PPDD; MR. PRISCILO MALALUAN, PPDD; MR. LEONARDO DAYAO, Jr., PPDD; Ms. LILIAN PORTERIA, PPDD; and Ms. LUALHATI EGUIA, PPDD; and those who worked closely with us in Bohol; MR. CALIXTO M. SEROJE, Engineer, National Irrigation Administration (NIA), Tagbilaran; Engr. BALBINO L. SERENCIO, NIA, Tagbilaran; MR. BALTAZAR MACAS, Bureau of Fishery and Aquatic Research (BFAR), Cebu; MR. ESTANISLAO CHAN Jr., Bureau of Plant Industry (BPI), Cebu; Ms. EVA KHO, Ministry of Tourism (MOT), Cebu; and MR. DOMINGO FUDERANAN, Provincial Development Staff, Bohol.

We are also most grateful to MR. REY E. CRYSTAL, Regional Executive Director, Region VII, NEDA and other technical staff members of NEDA for their kind advice and assistance rendered to us. The information and data provided by them proved to be a great value to our study. A good deal of our work could not have been accomplished without the data, information and reports provided by the NEDA Office of Region VII.

We also wish to express our acknowledgement to the following Chiefs of line agencies of the Government for their kind hopsitality and cooperation:

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65. Mr. Vicente Suazo	Port Manager	PPA, Cebu
66. Mr. Rolando Gonzales	Planning Officer	PPA
67. Gov. Eduardo Gullas	Provincial Governor	Province of Cebu

Finally, we would like to express our deep sense of gratitude to our secretaries, Miss EMEGLYN JARINA, Mrs. TERESITA P. MACARAIG, Miss REMEDIOS PARDO and our draftsman, Mr. JOSE SALAZAR, and our special thanks to Mr. ARMANDO J. MACARAIG, Territory Manager, IBM Philippines, Cebu, and his staff for his unselfish support and cooperation, and to the research assistants for their hardwork, devotion and warmhearted assistance attached to our work. Without their capable contribution, our work would have never been completed.

TABLE OF CONTENTS

(Cont.)

INTRODUCTION

1. Objectives of the Bohol Integrated Area Development Project (BIADP)

A primary objective of this work is to formulate a master plan for the Bohol Integrated Area Development which requires an extensive study of the problems besetting Bohol province and formulation of a long range development plan based on projections of major socio-economic trends of Bohol. However, because of Bohol's desire for immediate implementation of development programs/projects) primary emphasis for the present work has been placed upon identification of the "high impact programs/projects" which could be carried out within the short span of time. As a result, lesser attention is drawn to the problems which should be approached within a long time framework.

In this report a strategic decision was made as to the nature and objectives of a comprehensive or integrated area development plan for Bohol province; viz., a comprehensive development plan is defined as a "heuristic device" whereby the "high impact programs/projects" are identified and formulated so as to expedite immediate policy actions.

2. *Composition of Report*

In order to accomplish the objectives set forth for the present study, the report comprises the following Parts and Contents:

Part I: Provincial Development Framework

- Socio-Economic Profile of Bohol Province
- Development Problems of Bohol Province
- Development Potentials of Bohol
- Problems of Socio-Economic Development of the Philippines and Region VII
- Development Objectives and Strategies of Bohol

Part II: Sectoral Development Programs and Projects

- Strategy and Methods of Program & Project Planning
- Economic Sector
  - . Agriculture and Livestock Industry
  - . Forestry
  - . Fishery Industry
  - . Mining and Manufacturing Industry
  - . Tourism
- Infrastructure Sector
  - . Water Resources Management
  - . Transportation Systems
  - . Energy
  - . Communication
- Social Services Sector
  - . Public Health
  - . Community Development
  - . Human Resources Development and Education
  - . Housing

Part III: Integrated Area Development Plan of Programs and Projects

Projects

- Development Scenario and Integrated Area Development Strategies
- Land Use Planning
- Inter-Sectoral Linkages of Development Programs and Projects
- Financial Resources of Bohol Province and Investment
- Implementation Planning and Schedule

The necessary figures and tables are included in the text; supplementary figures are attached at the end of each chapter as an appendix.

3. Logical Framework of Report

A logical framework used in the present work can be simply stated as follows:

First, a long range development framework for Bohol province was drawn up using the consecutive steps of analysis namely: 1) problem identification, 2) assessment of development potentials, 3) positioning of Bohol economy within the larger framework of the economies of Region VII as well as of the Philippines, and 4) evaluation of sectoral objectives and strategies.

Second, according to the macro-economic development framework established by the preceding step, a variety of the "high impact programs/projects" were formulated for each sector and sub-sector of the Bohol economy.

Third, an attempt was made to convert these programs/projects into an integrated area development plan of Bohol. In addition, brief remarks were made upon how these high impact programs/projects are to be implemented under the prevailing conditions of Bohol, i.e., particularly the scarcity of financial resources.

4. Composition of the Japanese Study Team for the BIADP

The present study was carried out by the Japanese Study Team for the BIADP especially organized for this purpose by JICA. The professional staff members comprising the team are as follows:

Dr. MATSUO, Hidetoshi	Team Leader/Agriculture Development Expert
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Mr. SATO, Akitoshi	Industrial Economist
Mr. TOGO, Akihiko	Irrigation Engineer & Land Use Planner
Mr. SATO, Kimihisa	Industrial Economist

ABBREVIATIONS

AGENCIES, INSTITUTIONS, AND ORGANIZATIONS

ACA	Agricultural Credit Administration
ACMDC	Atlas Consolidated Mining and Development Corporation
BA	British Admiralty
BAEcon	Bureau of Agricultural Economics
BAExt	Bureau of Agricultural Extension
BAI	Bureau of Animal Industry
BC	Budget Commission
BCOD	Bureau of Cooperatives Development
BFAR	Bureau of Fisheries and Aquatic Resources
BFD	Bureau of Forest Development
BIMDC	Bohol Integrated Manpower Development Center
BOI	Board of Investment
BP	Bureau of Posts
BPI	Bureau of Plant Industry
BS	Bureau of Soils
BUTEL	Bureau of Telecommunications
CAA	Civil Aeronautics Administration
CRC	Central Radio Communications
DBP	Development Bank of the Philippines
FAO	Food and Agriculture Organization
GSIS	Government Service Insurance System
IBRD	International Bank for Reconstruction and Development
ISA	Irrigation Service Association
IRRI	International Rice Research Institute
LMIS	Labor Market Information Service
LWUA	Local Water Utility Authority
MA	Ministry of Agriculture
MAR	Ministry of Agrarian Reforms
MC	Metro Cebu
MEC	Ministry of Education and Culture
MFA	Ministry of Foreign Affairs
MHS	Ministry of Human Settlements
MLGCD	Ministry of Local Government and Community Development
MNR	Ministry of Natural Resources

MOE	Ministry of Energy
MOH	Ministry of Health
MOI	Ministry of Industry
MOT	Ministry of Tourism
MPH	Ministry of Public Highways
MPI	Ministry of Public Information
MPW	Ministry of Public Works
MSSD	Ministry of Social Services and Development
MTC	Ministry of Transportation and Communication
NACIAD	National Council on Integrated Area Development
NACIDA	National Cottage Industries Development Authority
NAPOCOR	National Power Corporation
NAS-NEDA	National Accounts Staff, National Economic and Development Authority
NCSO	National Census and Statistics Office
NEA	National Electrification Administration
NEDA	National Economic and Development Authority
NFAC	National Food and Agriculture Council
NHA	National Housing Authority
NHC	National Historical Commission
NIA	National Irrigation Administration
NMYC	National Manpower and Youth Council
NPC	National Power Corporation
NRO	NEDA Regional Office
NWRC	National Water Resources Council
PAHRA	Presidential Assistant on Housing and Resettlement Agency
PAL	Philippine Air Lines
PCA	Philippine Coconut Authority
PCSPE	Presidential Commission to Survey Philippine Education
PFMA	Philippine Fish Marketing Authority
PMCES	President Marcos Corn Experiment Station
PNB	Philippine National Bank
PNOC	Philippine National Oil Commission
POPCOM	Population Commission
PPA	Philippine Ports Authority
PPDD	Program Planning and Development Department
PTA	Philippine Tourism Authority

PTC	Philippine Tourism Commission
PT & T	Philippine Telephone & Telegraph Corporation
RCPI	Radio Communication of the Philippines, Inc.
RDC	Regional Development Council
RDS-NEDA	Regional Development Staff, National Economic and Development Authority
SSS	Social Security System
UNDP	United Nations Development Plan
UP	University of the Philippines
WHO	World Health Organization

OTHER TERMS

AADT	Annual Average Daily Traffic
BIAD	Bohol Integrated Area Development
BIMDCP	Bohol Integrated Manpower Development Center Program
BOE	Barrels of Oil Equivalent
BSTVT	Basic Skills Training in Vocational Trade
CBFIC	Cogtong Bay Fishery Industry Complex
CESO	Career Executive Service Officer
CIP	Communal Irrigation Project
CYI	Crop Yield Index
DPT	Diphtheria, Pertussis, Tatanus
EPP	Export Priority Plan
EPZ	Export Processing Zone
GDP	Gross Domestic Product
GRDP	Gross Regional Domestic Product
GSIS	Government Service Insurance System
HRA	Hotel and Restaurant Administration
IAD	Integrated Area (for) Development
IADO	Integrated Area Development Officer
IEC	Information, Education, and Communication
IPP	Investment Priorities Plan
MT	Metric Ton
IQF	Individually Quick Frozen
NASTP	National Agricultural Skills Training Program
NIRC	National Internal Revenue Code

NRB	Non-directional Radio Beacon
NTTS	National Telegraphic Transfer Service
PLECS	Provincial, Law Enforcement Communication System
RHU	Rural Health Unit
RICDF	Rural Improvement and Community Development Fund
RIP	Reservoir-type Irrigation Project
SEAP	Self-Employment Assistance Program
SIR	Slum Improvement and Resettlement Program
TIDA	Total Integrated Development Approach
PD	Presidential Decree
PDAP	Provincial Development Assistance Program
PPO	Provincial Population Office

PART I

PROVINCIAL DEVELOPMENT FRAMEWORK

CHAPTER 1
GENERAL BACKGROUND OF BOHOL DEVELOPMENT

CHAPTER 1 GENERAL BACKGROUND OF BOHOL DEVELOPMENT

1.1 Problem Description

Bohol Province, located in the Central Visayas, has a small population and a limited number of industries. Agriculture, Bohol's major industry, occupies most of the vast tracts of land in Bohol. The development of the province's main industry requires improvements in the irrigation facilities, agricultural technology, land use and land distribution. The neglect of these factors has contributed to the low average income of the province compared with the average national income. Such low average income is the primary cause of the high rate of emigration in Bohol. (see Fig. 1.1) Moreover, the province is quite underdeveloped in terms of industrial as well as social infrastructure.

In order to reduce the regional income disparity, it is necessary that Bohol's economic development be accelerated. By so doing, the income differences between regions will gradually decrease, creating in effect a more balanced growth among the regions of the Philippines. The Philippine Government should, therefore, give a high priority to underdeveloped provinces, particularly to Bohol, in implementing its integrated development plans.

Bohol province possesses the following characteristics which can be effectively utilized in its future development:

(1) Unexploited natural resources as well as tracts of land which have not been utilized.

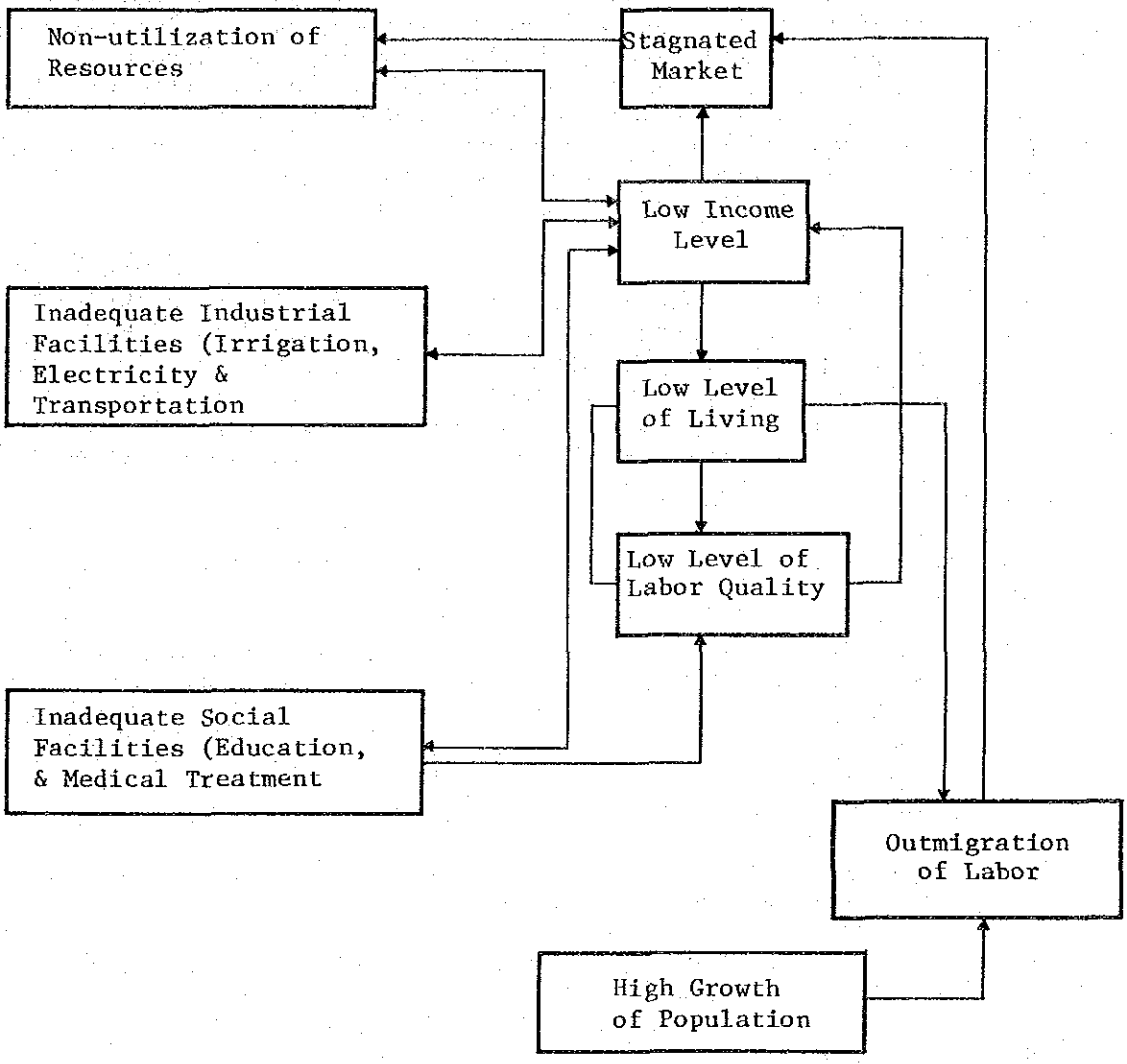
(2) The existence of a good market for basic as well as luxurious commodities, since it is geographically situated very close to Cebu, the economic center of the Central Visayas.

(3) Adequate manpower and the possibility of improving the quality of labor through skill training.

The future development of Bohol's industrial and social infrastructure will facilitate the implementation of the strategic development programs/projects of the economic sector. Such programs/projects should include the exploitation of resources available in Bohol. However, the development plans of Bohol should be formulated on the basis of a careful consideration of the role of Bohol's economy in the entire country as well as in Region VII.

Through the integrated area development approach, a balanced economic development of Bohol can be achieved. Taking into consideration the condition of the resources in the province, priority should be given to the development strategies of the agriculture, forestry and fishery industries. In line with these strategies, improvements in the industrial infrastructure (i.e., electricity, ports and road facilities) and social infrastructure (i.e., education, communication, etc.) should also be implemented.

Fig. 1-1 THE VICIOUS CYCLE OF LOW LEVEL OF INCOME IN BOHOL



The main task should be centered on increasing the agricultural productivity in the province as well as on expanding its marketing outlets. The following should be considered essential for the purpose of accomplishing this task.

(1) To convert the unused land to arable land and improve the land's productivity through the implementaion of systematic irrigation projects.

(2) To increase the market acceptability of Bohol's products through improvements in the quality of the products.

(3) To develop the agro-fishery processing industries and improve the distribution mechanism of the agriculture and fishery products.

The acceleration of the economic growth, however, cannot be attained if all efforts are concentrated solely in developing the agricultural sector. Hence, to reach the desired economic level, an attempt must be made to expand the scale of economic activities for all industries. Such industrial development efforts should include:

(1) The development of the food-processing industries; more highly-processed agriculture and fishery products.

(2) The development of the consumer goods industry in the province which cater to large markets such as the Metro Cebu (e.g. textile, apparel and wood products industries).

(3) The development of resource based industries, making good use of the resources available in the province (e.g., industries of alcogas production, coconut oil, ceramics, cottage type, etc.).

(4) The promotion of tourism and other service-oriented industries.

(5) The development of foot-loose industries ancillary to Metro Cebu industrial growth pole.

In order to expedite the economic development in Bohol, it will be necessary to design an integrated area development plan which will be best suited to satisfy the real needs of Bohol province.

The development plan should also be based upon a realistic assessment of whether or not it is actually possible to bring about the expected outcome.

1.2 Integrated Area Development Method of Approach

In determining the development strategies needed for the Bohol integrated area development plan, the following procedural steps are used in the present work.

Part I: Establishment of a Long Term Development Framework of the Bohol Economy.

Step 1: Description of the socio-economic conditions of the Bohol Province.

Step 2: Identification of development problems and constraints confronting Bohol.

Step 3: Evaluation of the development potential for Bohol.

Step 4: Location of the development objectives of Bohol province within the context of the development plans of the national government and Region VII.

Step 5: Setting of development objectives and/or targets of specific sectors, i.e., economic, infrastructure and social services sectors, and formulation of their development strategies.

Part II: Formulation of Development Programs and Projects

Step 1: Descriptive analysis of current problems and trends.

Step 2: Assessment of the development potential.

Step 3: Setting of development objectives and targets.

Step 4: Formulation of development strategies.

Step 5: Formulation of long term development programs.

Step 6: Identification of high impact projects.

Part III: Formulation of Integrated Area Development Plan of Programs and Projects.

Step 1: Formulation of development scenarios and integrated area development strategies.

Step 2: Land use planning.

Step 3: Evaluation of inter-sectoral linkage of development programs and projects.

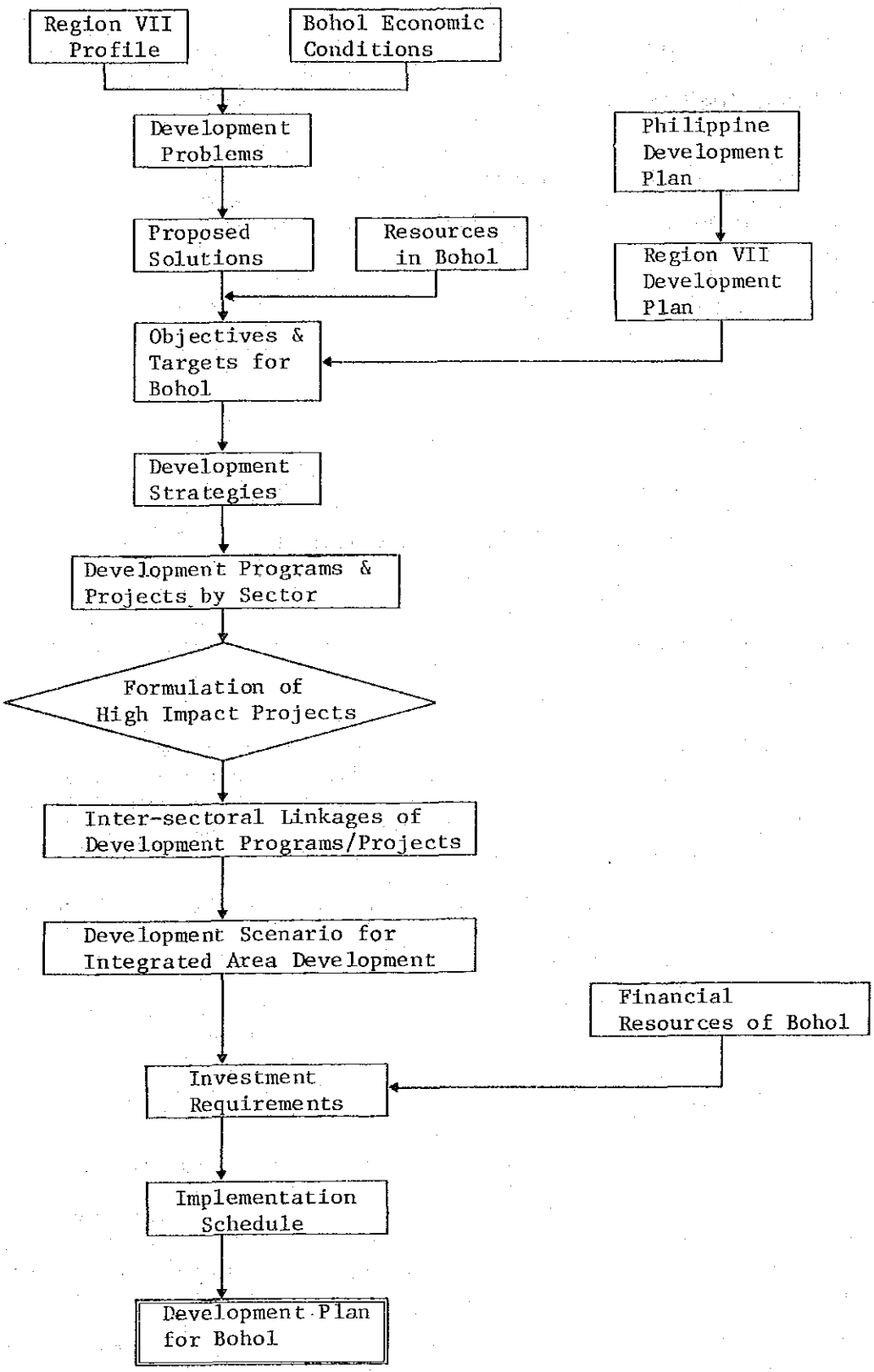
Step 4: Assessment of financial resources of Bohol.

Step 5: Implementation plan and schedule.

Figure 1-2 schematically shows how these planning steps are mutually related to each other.

The present work as a whole is organized according to this overall framework of research procedure with the exception of Part II which is not arranged by these procedural steps, but by the three major sectors

Fig. 1.2 PROCEDURAL STEPS FOR THE BOHOL INTEGRATED AREA DEVELOPMENT PLAN



and their sub-sectors as follows:

Economic Sector:

- Agriculture and Livestock
- Forestry
- Fisheries
- Mining and Manufacturing
- Tourism

Infrastructure Sector:

- Water Resources Management
- Transportation System
- Energy
- Communication

Social Services Sector:

- Public Health
- Community Development
- Human Resources Development and Education
- Housing

However, it must be noted that these steps are planned to be carried out in accordance with the following guidelines, principles and assumptions.

Firstly, the primary objectives of Part I, Provincial Development Framework, are concerned with the formulation of a long term development framework. It is intended to establish a general policy guideline for the integrated area development of Bohol on the basis of which specific development programs/projects are to be formulated for the major sectors of Bohol economy. Part II, Sectoral Development Programs/Projects, is designed to achieve the major objective of the present work, namely, to formulate a set of high impact projects concerning the sectors which have special significance for the development in Bohol. The high impact project is defined as a type of project which will give an initial thrust or propulsive effect to the socio-economic development of Bohol. Part III, Integrated Area Development Plan of Programs/Projects, is intended to spell out a general development framework for integrated area development of Bohol within which the respective roles of high impact projects are to be evaluated and the future direction of the development of Bohol can be indicated.

Secondly, all of the necessary description and explanation will be made according to the classification of sectors which have often been used in the Philippines. Namely, the sectors are divided into three main ones: 1) economic sector, 2) infrastructure, and 3) social services, and each of them is further subdivided into sub-sectors mentioned above.

Thirdly, the concept of IAD (Integrated Areas for Development) has been used for Bohol and all the provinces in the Philippines as a system planning concept. (See sections 7.4.1 (2), 7.4.3 (4) and 22.2.2 (3)).

In addition, the term IAD has also been used as an intermediate planning unit between the municipal and provincial levels (see Section 7.4.5). For this reason, the concept of BIAD is used in the present work both for the integrated area planning for Bohol and for the 5 sub-divisions which comprise the area in Bohol for which the planning is necessary.

A brief description of the chapters comprising Part I. follows:

- To create a realistic image or profile of Bohol by summarising the prevailing conditions in Bohol, e.g., socio-economic and natural environment (Chapter 2).

- To pinpoint the major problem areas awaiting policies or rectifying actions (Chapter 3).

- To make an overall evaluation of the development potential for Bohol (Chapter 4).

- To position the Bohol economy within a larger development framework for Region VII and the Philippines as a whole (Chapter 5).

- To formulate development strategies most suited to Bohol taking into account the comparative advantages or disadvantages and to determine the planning objectives for each sector of the Bohol economy (Chapter 6).

CHAPTER 2
SOCIO-ECONOMIC PROFILE OF BOHOL PROVINCE

CHAPTER 2 SOCIO-ECONOMIC PROFILE OF BOHOL PROVINCE

2.1 General

Bohol Province is located in the Central Visayas (Region VII) with a total land area of 411,730 hectares which is predominantly hilly and rolling with narrow coastal plains. Rainfall in Bohol is more or less evenly distributed throughout the year.

According to the population census, the population of Bohol was placed at 683,000 in 1970 and 759,370 in 1975. The population density in Bohol was 166 people per square kilometer in 1970 and 184 people per square kilometer in 1975. These figures are very small compared with the 388 people per square km. for Cebu Province.

The primary industries, (agriculture, livestock and fishing), the most important sector, have very low productivity caused by the following factors:

- inadequate irrigation
- poor transport system
- inadequate ports and storage facilities
- insufficient electric power supply
- limited number of marketing distribution channels
- lack of agricultural technological development
- low fertility of soil

In order to accelerate the economic growth of Bohol, an adequate irrigation system, further technical innovation in agriculture and fishery, and improvement of transport network would be necessary. At the same time, social infrastructure such as education and health facilities must also be reinforced.

The socio-economic conditions in Bohol Province are relatively depressed compared with those of the other provinces of Region VII, although human resources are abundant. If these are effectively utilized in the future, Bohol will be able to move out of the present state of economic stagnation.

2.2 Natural Resource Conditions

2.2.1 Land

The total land area of Bohol is 411,730 hectares which is 27.5% of the total land of Region VII. A detailed classification of Land areas for Bohol and Region VII as of 1974 is shown in the table below.

Table 2.1 Land Classification of Bohol and Region VII (1974)

Classification	Bohol		Region VII[1/]	
	Hectares	(%)	Hectares	(%)
Alienable & Disposable	308,205	(74.8)	795,740	(53.2)
Classified Timberland	80,725	(19.6)	380,888	(25.5)
Established Timberland	38,977	(9.5)	225,653	(15.1)
Reforestation Projects	22,329	(5.4)	74,181	(5.0)
National Parks	-	-	17,086	(1.1)
Forest Resources	19,410	(4.7)	57,220	(3.8)
Civil Military Reservations	9	(0.0)	6,748	(0.4)
Unclassified Public Forest	22,796	(5.5)	318,514	(21.3)
Total	411,726	(100.0)	1,495,142	(100.0)

Source: Bureau of Forest Development Region VII, Cebu City

Note: 1/ Region VII constituties about 6% of the total land area of the Philippines.

The island is relatively hilly and rolling with narrow coastal plains. Low rolling hills and broad open valleys are concentrated in the northeast and the central parts of the island. On the other hand, the southern half has a comparatively rough terrain broken by deep valleys.

The soil formation of Bohol is predominantly limestone, especially along the coastal area. Most parts of this province are of shale rock, whose calcareous content makes the soil relatively favorable for the cultivation of tobacco, sugarcane, corn and coconut.

There are three large rivers in the island:

in the northeast ..... the Ipil-Wahig Rivers
in the north ..... the Inabanga River
in the south ..... the Loboc-Manabe Rivers

Water resources from these rivers, however, are not sufficient for large-scale irrigation and electric power supply.

With regard to its climatic condition, the province is partially sheltered from the full effects of the moist air mass coming from adjacent islands. Thus the region receives less precipitation than most other areas in the Philippines. Rainfall in Bohol is fairly evenly distributed throughout the year. The average monthly rainfall amounts to 182.8 mm. in January and 171.3 mm. in July.

2.2.2 Forestry

The total public forest area of the province as of June 1973 was 77,887 hectares, of which the commercial forest accounted for 15.5% and the non-commercial forest was 36.6%. As compared with Negros

Oriental and Siquijor, where commercial forest accounts for 84% of the total public forest, the share of commercial forest is rather small in the Bohol province although it is about par for the Region.

Table 2.2 Public Forest Areas of Bohol and Region VII (1973)

Classification	Bohol	Region VII
	Hectares (%)	Hectares (%)
Commercial Forest	12,097 (15.5)	82,839 (15.5)
Non-Commercial Forest	28,515 (36.6)	132,952 (24.9)
Non-Forest Area	37,275 (47.9)	317,092 (59.5)
Total	77,887(100.0)	532,883(100.0)

Source: 1973 Phil. Forestry Statistics, Bureau of Forest Development.

Presently, there are two reforestation projects covering the whole province. The total area coverage of the two reforestation projects in Bohol amounts to 22,328 hectares.

2.2.3 Fishing and Aquatic Resources

The Bohol Strait on the northwest side of the province is a rich fishing ground. This zone is surrounded with shoals covering 20 to 40 meters in depth and 5 to 10 nautical miles, and has innumerable islets and coral reefs. The fish usually found in this zone are bonito, anchovy, tuna, mackerel, flying fish and round scad.

The main fishing ports in the province are Tagbilaran and Tubigon ports. As of 1977, there were 17,570 fishermen involved in marine fishing with 3,639 vessels with engines. There also were 7,493 vessels without engines.

The total production of the commercial fishing in 1977 amounted to 1,713 M.T. and that of the municipal fisheries to 27,009 M.T. There were 1,906 hectares of brackish-water fishponds in 1973 and the production from these ponds amounted to 1,048 M.T.

2.2.4 Mineral Resources

Compared with other provinces of Region VII, Bohol province has few metallic minerals. However, it has an abundant supply of non-metallic minerals, such as limestone, silica, clay, gravel, marble, soda ash and guano.

Limestone is widely distributed throughout the province and the main mine site is located in Garcia-Hernandoz. Soda ash deposits are found in Lila, clay in Buenavista, silica in Talibon and guano in Trinidad.

2.2.5 Water

As mentioned earlier, rainfall in Bohol is more or less evenly distributed throughout the year. In addition, several large rivers are found in the island. The important ones are the Inabanga in the west and the Loboc in the south. Others are the Manabe, the Cambangay, the Abatan and the Gabatang rivers. The Gabatang River usually is dry.

Table 2.3 Volume of Running Water in Major Rivers, Bohol

Catchment Area (Name)	(km^2)	Annual Rainfall (mm/year)	Effective Rainfall (mm/year)	Annual Discharge (mm/year)	Runoff Coeff. (%)	Total Discharge (mil.m^3/year)
Loboc	650	1,900	1,100	970	54	630
Wahig	615	1,700	980	850	50	520
Ipil	417	1,500	750	675	45	280
Cabidian	288	1,800	1,080	940	52	270
Abatan	606	1,500	750	675	45	410
Southern Area	630	1,800	1,170	1,000	56	630
Northern Area	591	1,500	750	675	45	400
Total						3,140

2.3 Demographic and Social Conditions

2.3.1 Population

According to the 1970 population census the entire population of Bohol province was 683,000. In 1978 the NCSO estimated the population of Bohol to be 773,000. The annual rate of population increase obtained from these figures placed at 1.6 percent (2.0 percent in Region VII). The population density is 188 persons per square kilometer in 1978, and is lower than the average in Cebu of 388 persons per square kilometer.

Table 2.4 Population in Bohol & Region VII

Location	Actual Pop. 1970 (Thousand persons)	Actual Pop. 1978 (Thousand persons)	Percentage 1978 (%)	Land Area (sq.km)	Density 1978 (sq.km.)
Bohol	683	773	21.7	4,117.3	188
Cebu	1,634	1,976	55.4	5,088.4	388
Negros Oriental	652	749	21.0	5,402.3	139
Siquijor	63	68	1.9	343.5	198
Region VII	3,032	3,566	100.0	14,951.5	238

Source: NCSO

2.3.2 Labor Force

In 1975, the total labor force was 232,800 persons, of which 64.8 percent were engaged in agriculture and fishing.

Table 2.5 Occupational Workers by Industry

	(Thousand Workers)	(%)
Agriculture and Others	150.8	64.8
Mining	0.3	0.1
Manufacturing	28.6	12.3
Electricity, Gas and Water	0.3	0.1
Construction	3.6	1.5
Commerce	14.6	6.3
Transportation	4.4	1.9
Services	25.7	11.0
Miscellaneous	4.7	2.0
Total	232.8	100.0

Source: NCSO 1975 Integrated Census of the Population and its Economic Activities Bohol.

As of 1977, there were 17,570 fishermen under engaged in marine fishing and 184 in inland fishing. Roughly speaking, the majority of the labor force are farmers. By occupation, 64.8% of the total labor force are farmers and fisherman, 14.2% craftsmen and workers, 6.2% salesmen, 4.7% service workers, 3.9% engineers, 1.9% transportation and communication workers, and 1.8% port workers.

2.3.3 Education

Bohol Province has 858 elementary schools (including 3 private school) in 1978. All cities and municipalities have public primary schools and public intermediate schools. The average number of schools per municipality is 18, the maximum being 30.

The number of secondary school in Bohol is 82,including night schools. The details are as follows:

- Public High Schools	39
General High Schools	3
Barangay High Schools	32
Vocational High Schools	4
- Private High Schools	
General High Schools	43
Total	82

Source: MEC, Region VII

There are seven universities and colleges in Tagbilaran, one college in Jagna and one college in Carmen.

2.3.4 Health and Nutrition

Because of poor health facilities, the mortality rate of Bohol is very high as compared with that of the whole country. As the following table comparatively indicates, additional medical assistance is badly needed.

Bohol	WHO's minimum requirements
1 physician/15,320	(1/10,000 population)
1 nurse/15,320	(1/5,000 ")
1 midwife/9,384	(1/5,000 ")

Source: NCSO

At present the total number of hospitals is 15, and the bed-population ratio is estimated to be 1:1271. Out of the 47 municipalities of the province, hospitals beds are concentrated in only five areas.

The population of Bohol took in an average of 600 grams of food per day in 1975, of which 60% was cereals and their by-products, 6% other carbohydrate sources (starchy roots, tubers, sugar and syrups), 18% fruits and vegetables and 16% protein sources (especially fish).

2.4 Economic Conditions

2.4.1 General

The economy of Region VII (including Bohol Province) exhibited an annual growth rate of 8.8 percent during 1971 and 1974. This growth rate is considered high as compared with the whole Philippine annual economic growth rate of 6.7 percent, but Bohol's economic base is smaller.

The per capita income of Bohol in 1975 was 683 pesos per annum, which is below the country's per capita income of 2,029 pesos per annum, and lower than that of Cebu (1,185 pesos/annum).

Per Capita Income in 1975

Bohol	683	(100)
Cebu	1,185	(173)
Whole Country	2,029	(297)

Source: NCSO

According to the 1975 household survey, the total income amounted to 518,580,023 pesos, and the total expenditures to 508,365,755 pesos.

The details of the expenditures are as follows:

Items	Share
Food, Beverages and Tobacco	63.8%
Clothing and Footwear	6.6%
Housing, Equipment and Operations	9.8%
Fuel, Light and Water	5.3%
Transport and Communication	2.4%
Personal and Medical Care	1.8%
Education	2.3%
Others	8.0%
Total	100.0%

Source: 1975 Household Survey

With regard to consumption behavior, the important sectors in Bohol are the primary sectors, especially agriculture which provides the necessary food in Bohol.

Though the per capita income is low, the price level is relatively lower in Bohol compared to that of other provinces making the real purchasing power of the peso comparatively high (See Table 2.7).

From this point of view, it is necessary to give priority to the agricultural and fishery sectors for the development of the Bohol province. At the same time improvements in the industrial and social infrastructure, such as roads, ports and electric power facilities should be reinforced throughout the province. Moreover, it is necessary to diversify the industries of Bohol into various types of manufacturing industries, such as food processing, textile and tourism industries.

2.4.2 Agriculture

In Bohol, the most important and largest industry is agriculture. The central and northeast basins of Bohol are wide, gently rolling plains which are ideal for the development of agriculture and livestock industry. These two basins are the most extensive openland in the island with an estimated total area of 76,720 hectares.

The southern coastal lowlands is a continuous stretch of coconut palms which could be the base for a thriving copra industry.

Table 2.6 Average Yield Per Hectare, By Major Crops

Crop	1960	1971	Annual Growth Rate (%)
Palay	0.95 Mt/ha	1.37	3.38
Coconut	4.69	2.69	-5.18
Corn	0.57	0.68	1.62
Tobacco	0.43	0.43	-
Sugarcane	0.02	0.40	31.30
Abaca	0.57	0.67	1.48
Coffee	0.27	0.26	-0.34
Total	1.96	1.64	-1.63

Source: Census of Agriculture

Table 2.7 Price Level of Main Commodities in Each Province of Region VII

(Unit: Pesos in Base Year 1972)

COMMODITY	CEBU		BOHOL		NEGROS ORIENTAL		SIQUIJOR	
	June	July	June	July	June	July	June	July
Foods	203.85	204.63	194.03	193.63	192.18	191.48	197.25	195.17
Beverages	221.40	221.40	187.88	187.88	204.92	204.92	190.63	190.63
Tobacco	164.30	164.30	189.89	181.16	156.22	155.11	181.29	181.29
Clothing	200.82	200.82	229.82	234.30	213.96	217.73	209.31	209.52
Housing & Repair	301.41	306.61	149.63	155.97	345.26	346.60	378.78	378.89
Fuel, Light and Water	167.63	167.63	174.94	177.52	218.57	218.57	162.39	162.39
Services	188.91	191.84	150.41	153.11	224.60	224.70	139.59	140.81
Miscellaneous	238.50	238.88	204.41	212.47	229.58	232.62	251.60	255.19
All Items	214.78	214.94	190.43	189.44	218.15	218.55	216.43	216.76
Purchasing power of the Peso	0.47	0.47	0.53	0.53	0.45	0.46	0.46	0.46

Note: Preliminary release
Source: Region VII Statistical Bulletin, July 1978

The preceding tables show that the agricultural productivity in Bohol is very low. This is caused by low fertility of soil and lack of irrigation facilities and agricultural technology.

The figures from 1960 to 1971 show a very minimal increase in the agricultural production (See Table 2.9). If new lands have not been opened for agricultural production, Bohol would have suffered a set back in production, such as a decrease in its average yield per hectare.

The agricultural products of Bohol are classified into annual crops (palay, corn, root crops, sugarcane and tobacco), and perennial crops (coconut, cacao, coffee, abacana fruit crops).

Table 2.8 Area Planted by Major Crops, Bohol, 1974

Crop	Absolute Crop. Area (Ha) (1)	Effective Crop. Area (Ha) (2)	(2)/(1) x 100
Annual Crops			
Palay	29,559	51,306	174%
Corn	14,462	27,225	188
Root Crop	10,189	13,068	128
Sugarcane	260	262	101
Tobacco	167	216	129
Other	1,272	1,711	135
Sub-total	55,909	93,572	167
Perennial Crops			
Coconut	39,257	-	100
Cacao	326	-	100
Coffee	409	-	100
Abaca	289	-	100
Fruit Crop	9,408	-	100
Other	1,791	-	100
Sub-total	51,480	51,480	135
Total	107,389	145,052	135

Source: Bohol, 1971 Census of Agriculture

Undoubtedly, the most important crop in Bohol is palay. About 74 percent of the total farmers produce palay, and the palay harvested area amounts to 51,306 hectares (174% in effective use rate). The palay production of Bohol was 70,461 tons in 1971 as shown below. The agricultural conditions, however, leave much to be improved, with low fertility of soil, inadequate irrigation, poor roads and lack of agricultural technology.

The improvement of agricultural conditions is a strategic need.

Table 2.9 Production of Major Crops

Crops	1960 (Metric Tons)	1971 (Metric Tons)	Annual Growth Rate (%)
Palay	42,868.8	70,461.0	4.62
Coconut	138,686.5	106,232.0	-3.40
Corn	14,028.8	18,642.0	2.60
Tobacco	40.4	96.6	8.25
Sugarcane	3.0	102.0	37.88
Abaca	150.5	196.8	2.46
Coffee	42.0	108.2	8.98
Total	195,820.0	195,838.6	-

Source: NCSO

2.4.3 Other Industry

Besides agriculture, the major industries of Bohol are livestock and fishing industries.

The main species of the livestock industry of Bohol are cattle and water buffaloes; the rest are hogs, goats and poultry. As compared with the statistics of 1971, the number of all livestock in 1978 increased remarkably as shown below.

Table 2.10 Livestock Growth in Bohol

Type of Livestock	1971	1978	Annual Growth (%)
Carabao	73,035	97,010	4.14
Cattle	31,498	59,150	9.42
Horse	2,052	n.a.	-
Goat	11,726	n.a.	-
Hog	126,524	220,680	8.27
Chicken	864,832	1,487,890	8.06

Source: Census of Agriculture

In 1977, the total fish production amounted to 13,507 tons, and the most common species were bonito, tuna, anchovy, flying fish and round scad. The most important landing areas for fishing vessels are Tagbilaran and Tubigon ports.

The details of the fish production in 1977 are as follows:

Commercial Fishing	1,713 tons	(5.8%)
Municipal Fishing	27,009 tons	(90.7%)
Inland Fishing	1,048 tons	(3.5%)

Source: Fishery Statistics

Cottage industries are also important in Bohol: clay, buri, rattan and bamboo are widely distributed in the province to support the cottage industries such as hat, mat, basket, ceramics and furniture industries.

2.4.4 Inflow and Outflow of Products

Agriculture and fishery play an important role in the industrial structure of Bohol. The economy of Bohol is fairly self-sufficient, but weak in intersectional trade.

The following table gives an overview of the foreign and inland trade of Bohol.

Table 2.11 Exports and Imports of Bohol

1) Bohol Exports by Destinations

Manila	Cebu	Cagayan de Oro	Butuan	Iligan	Davao
Nito Baskets (15,600 pcs.)	Milled Rice (45,528 M.T.)	Beef (80 M.T.)	Beef c/ (661 M.T.)	Pork	Pottery
Limestone (n.a.)	Copra (42,505 M.T.)	Pork (95 M.T.) a/	Pork (573 M.T.)		Bricks (n.a.)
	Beef (148 M.T.)	Bricks (n.a.)	Bricks (n.a.)		
	Pork (161 M.T.)	Limestone (n.a.)			
	Pottery (5,000 pcs.) b/				
	Bricks (n.a.)				
	Limestone (n.a.)				

Note: a/..... includes export to Iligan
b/..... includes export to Davao
c/..... includes export to Surigao and Mangagoy

2) Bohol Imports by Source

Cebu	Cagayan de Oro	Butan
Cement (20,200 M.T.)	Corn Grits (39,809 M.T.)	Processed Timber (1,008,000 BD.FT.)
Cooking Oil (13,600 Cases)	Potato (69 M.T.)	
Beverage (102,000 Cases)	Animal Foods (n.a.)	
Cabbage (126 M.T.)		
Manufactured Goods (24,000 Cases)		

Source: Commodity Flow, Bohol (Date not indicated)

2.4.5 Employment

The table below on employment by industry reveals that agriculture has largest share in the employment of Bohol. The employment in the manufacturing industries accounts only for 12.3% of the total employment and a large part of this are in the textile industry and related industries as shown below.

Table 2.12 Employment by Industry: Bohol (1975)

Industries	Number	Share (%)
Agriculture, Hunting, Forestry and Fishing	150,790	64.8
Mining and Quarrying	324	0.1
Manufacturing	28,564[1/]	12.3
Electricity, Gas, Water and Sanitary Services	251	0.1
Construction	3,648	1.5
Commerce	14,553	6.3
Transport, Communication & Storage	4,396	1.9
Services	25,677	11.0
Industry not Adequately Described	4,621	2.0
All Industries	232,824	100.0

		Number	Ratio(%)
Note: 1/	Manufacturing Breakdown	28,564	100.00
	-Food	752	2.6
	-Textiles	17,548	61.6
	-Textiles Products	4,709	16.5

Source: National Census and Statistics Office

2.5 Social Infrastructure

2.5.1 Housing

It is said that the provision of adequate housing is increasingly recognized as a basic human need and one of national priorities in the Philippines.

In Bohol, the number of households amounted to 135,771 in 1978, and there is a degree of housing shortage in some areas.

Number of Households of Bohol in 1978

Urban	21,180
Rural	114,591
Total	135,771

Source: NCSO

The main objective of the housing sector is to gradually eliminate the housing backlog as well as to replace its barong-barongs (slums) and delapidated houses.

2.5.2 Transportation

The Bohol Island is located in the central zone of the Central Visayas. Therefore, the main means of transportation is marine transportation, although the ratio of air transportation has increased recently.

The inland transportation depends mainly on cars, buses, and trucks, with the absence of railroad. In 1979, Bohol had a total of 2,417.3 kilometers of road with a road-population ratio of 4.0 kms per 1,000 population. Of its total road kilometrage only 1.3% (45.9 kms) are of concrete. The rest are either made of earth, gravel or asphalt materials.

In Bohol, there are 24 port facilities. However, the majority of them are not used at present.

2.5.3 Electricity

In Bohol, only 20 percent of the province is supplied with electricity. In 1979 there were 13 power plants with a total plant capacity of 12.2 MW, serving 23 municipalities (half of the total 46) including the city of Tagbilaran. The total energy consumption of Bohol in 1979 is estimated to be 12.5 GWH.

CHAPTER 3
DEVELOPMENT PROBLEMS IN BOHOL

CHAPTER 3 DEVELOPMENT PROBLEMS IN BOHOL

3.1 Economic Problems

3.1.1 Low Production

The most serious economic problem in Bohol is the incredibly low productivity of the agricultural sector, the largest economic sector. The yield per hectare of the main agricultural products of Bohol has had only a very minimal increase in recent years. This low productivity may be attributed to the following:

- Inadequate irrigation
- Poor agricultural technology
- Inadequate road network and port facilities
- Low fertility of soil
- Insufficient land use

Of these, the most important reason for the low productivity in agriculture is the inadequate irrigation. Irrigation is a vital factor not only in terms of increasing yields in agricultural production, but also in the expansion of the harvest area of major crops. As shown in Table 3.1, the major cropland area (for Palay, coconut and corn) has been expanded at a very small rate (an average of 1.6% per annum).

Table 3.1 Growth of Areas Planted for Major Crops

Crop	1960	1971	Average Annual Growth rate (%)
Palay	44,883.0	51,305.9	1.2
Coconut	29,581.4	39,473.5	2.7
Corn	24,584.5	27,231.3	0.9
Tobacco	94.1	217.3	7.9
Sugarcane	125.0	257.0	6.8
Abaca	265.9	291.4	0.8
Coffee	154.5	406.8	9.2
TOTAL	99,652.4	119,183.2	1.6

Source: Census of Agriculture

One distinctive feature related to the low productivity in Bohol is the great difference among BIADs, in the yield levels of major crops. In terms of average yield difference by BIAD, minimum difference is in corn (maximum-minimum ratio of 1.8) and the maximum difference is in sugarcane (3.7), as shown in Table 3.2.

Table 3.2 Yield of Major Crops, Bohol, 1971

(unit: ton/ha)

	Corn	Root Crop	Sugarcane	Fruit Crop
Bohol (BIAD)	0.7	2.1	37.9	3.7
I	0.6	1.3	67.7	2.5
II	0.7	1.6	18.5	2.2
III	0.7	2.9	59.2	3.1
IV	1.1	2.4	33.3	7.2
V	0.7	2.1	46.1	2.6
max/min ratio	1.8	2.2	3.7	3.3

Source: NEDA Region VII, BIAD Growth Centers & Their Influence Area.

Low productivity is not only limited to the agricultural sector, but is likewise true with other economic sectors, such as, livestock, fishery and manufacturing. This is probably the reason why market sales for these commodities have not grown rapidly in the past. Inadequate marketing techniques also contributed much to this poor economic situation.

3.1.2 Low Income Level

Undoubtedly, the low income level in Bohol is due primarily to low production. However, although Bohol's per capita income (₱683) is comparatively lower than those of Cebu (₱1,185) and the average for the Philippines (₱2,029) (see Table 3.3), it cannot be considered to be low in the region in terms of standard of living, because the prices of prime commodities are relatively lower in Bohol. Nevertheless, it is necessary to increase the production of marketable commodities in Bohol in order to increase its level of income.

Table 3.3 Total Population and Income (1975)

	Income (Thousand Pesos)	Estimated Population	Per Capita Income (Pesos)	Relative Index of Per Capita Income (Bohol : 100)
Bohol	518,580	759,370	683	100.0
Cebu	2,153,979	1,818,410	1,185	173.5
Cebu-Urban	833,123	746,642	1,116	163.4
Philippines	85,354,000	42,070,660	2,029	297.1

Source: National Census and Statistics Office

3.1.3 Underemployment/Unemployment

The low production in Bohol inevitably brought about underemployment as well as unemployment. Nonetheless, Bohol has a considerable number of industries with the potential to offer productive employment opportunities in Bohol, although they still remain underdeveloped.

3.2 Problems of Infrastructure

The most vital factor contributing to the low productivity of Bohol's economic sector is the insufficiency of infrastructures such as irrigation, transportation, and electricity facilities.

3.2.1 Inadequate Irrigation

Although certain irrigation plans are being implemented at present, they are insufficient to increase the yield per hectare and to expand the harvest areas of agricultural land. Bohol had an estimated area of 3,600 hectares under irrigation in 1975. But, according to NIA estimations, prospective area for irrigation for the whole province amounts to about 37,000 hectares. The average yield per hectare of irrigated riceland in Bohol was placed at 60 cavans per hectare, while that of non-irrigated riceland is 40 cavans per hectare.* Thus, the most important and highest priority projects for Bohol are for irrigation.

3.2.2 Poor Transportation Facilities

For a smoother and more efficient flow of economic activities, it is necessary to improve the transportation system within the province. (1) Bohol has a total of 3,417 kilometers of road, with a road-population ratio of 4.0 kms per one thousand population. Only 1.3% of the total road length are of concrete; the rest are either made of earth, gravel or asphalt materials. However, if the Road Network Five-Year Development Plan by NTSS is implemented, the road conditions of Bohol will naturally be improved. Otherwise, the present roads will be insufficient to meet the transportation demand in Bohol. In addition, construction of other facilities such as bridges and ports is greatly needed. (2) On the other hand, Bohol has four national, eighteen municipal and two private ports at present. Except for the major ports of Tagbilaran, Tubigon and Jagna, the rest are very small with no port facilities. Moreover, the major ports suffer from inadequate facilities, as well as shallow water depth. Thus, for the future expansion of Bohol's inter-regional trade, particularly with Cebu, it is necessary to improve and expand selected ports of the province.

3.2.3 Lack of Electric Power Facilities

Another conspicuous problem in Bohol is the lack of electric power facilities. At present, there are thirteen power plants with a total plant capacity of 12.2 MW serving 23 municipalities, including Tagbilaran which consumes half of the total capacity. The service areas of the electrical power supply are concentrated in the western half of the province.

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* Note: 1 Cavan (Palay) = 44 kg.

3.3 Social Services Problems

3.3.1 Poor Health Standard

The critical problems concerning public health in Bohol are high infant mortality, poor accessibility to medical facilities and malnutrition of children. The death rate for infants under 1 year was 50.1 per 1,000 population in 1978. This was higher than that of the whole country as well as of Region VII in 1975. The death of newborn infants seems to be caused mainly by pneumonia.

The number of medical facilities in the province is quite satisfactory except for the number of existing Barangay Health Centers. However, the greater part of rural areas in the province still suffer from lack of medical facilities with easy access.

By virtue of agricultural production, the supply of food in the province is considered to be satisfactory. The local fisheries are wellserving the need for protein of the people living in coastal areas. The supply of protein to inland areas is, however, insufficient.

3.3.2 Inadequate Education System

As of 1978, the province had a total number of 858 primary schools, 82 secondary schools and 9 colleges/universities.

Table 3.4 Teacher-Pupil Ratio in Public Schools, Bohol and Cebu, 1976-7

Type	Total Enrollment (Bohol)	Total Number of Teachers (Bohol)	Teacher-Pupil Ratio		
			Bohol	Cebu	Region 7
Pre-school	361	17	1:21	1:20	1:31
Primary	100,474	2,745	1:36	1:34	1:37
Secondary	36,052	2,055	1:17	1:16	1:18

Source: MEC, Region VII

As can be seen from the Table 3.4, education facilities (including the number of teachers) in Bohol are not inferior in comparison with those of Cebu. Nevertheless, other problems still exists:

1. The decreasing enrollment rate for secondary school
2. The high rate of drop-outs
3. The insufficient number of teachers

3.3.3 Outmigration

Bohol's average population growth rate of 1.4% for the first half of 70's is the lowest in the region. This figure includes an increasing rate of outmigration from the province, with at least 40% of the natural population migrating to other areas of the region, as well as, to other parts of the country. This is undoubtedly due to the low per capita income and the scarcity of employment opportunities in the province.

This trend, however, is a drain on the available manpower re-cources of the province, and a vital constraint on its economic growth.

3.3.4 Inequalities in Income Distribution

Inequalities in income distribution have always been a critical problem not only in Bohol, but also in most developing areas anywhere. Inequalities among municipalities and families are particularly wide in Bohol, although it can hardly be said that Bohol suffers more than other areas when compared on a national basis as shown in Table 3.5.

In terms of equity, this imbalance is undesirable and should be considered as a development barrier which must be resolved. Although, the underdeveloped areas, such as Talibon, Ubay and Trinidad high resource potentials, they suffer from this economic imbalance. It is therefore recommended that these areas should be developed as strategic development zones to equalize their income with other municipalities.

Table 3.5 Income Class Distribution, Bohol (1971)

Income Class	Bohol		Philippines
	Pop.	Percent	Percent
Under ₱500	15,524	12.5	5.2
500 - 999	15,422	12.4	12.1
1000 - 1499	17,467	14.1	12.2
1500 - 1999	17,466	14.1	11.8
2000 - 2499	9,719	7.8	17.7
2500 - 2999	9,719	7.8	
3000 - 4999	16,494	13.3	20.0
5000 - 5999	5,805	4.6	21.0
6000 - 7999	3,887	3.1	
8000 - 9999	11,555	9.3	
10000 - 19999	1,242	1.0	
20000 & over			

Source: NCSO

3.4 Development Constraints

There are several constraints preventing the economic and social development of Bohol province.

3.4.1 Financing

Although public finance in Bohol is relatively sound, it undoubtedly is insufficient to support public investments, such as expenditures for irrigation, road and port construction, as well as, social infrastructure. At present, the financing of public investment depends on the Central Government, foreign institutions, and other provinces and regions. As the key factor to a successful development thrust in Bohol will be effective finance procurement, the following are deemed necessary:

- Presentation of concrete and strategic projects
- Establishment of an integrated development plan
- Feasibility study on financial procurement

3.4.2 Manpower Skill Deficiencies

In spite of the increasing drain of manpower due to outmigration from Bohol, an ample supply of manpower resources still exists. However, the labor situation leaves much to be desired. The reasons for this are:

- Lack of labor force with technical skills
- Inadequate supervisors and middle management
- Poor management

3.4.3 Selected Resource Gaps

The two industries with relatively limited resources are mining (with the exception of limestone) and forestry for commercial purposes. There exists, however, an abundant supply of resources for the major economic sectors, namely, agriculture, livestock and fishery and the pattern of economic growth in Bohol will then be a primary industries oriented type.

CHAPTER 4
DEVELOPMENT POTENTIALS OF BOHOL

CHAPTER 4 DEVELOPMENT POTENTIALS OF BOHOL

4.1 Land – Agricultural Resources

In Bohol, the central and northeast basins are wide rolling plains with 0-15° slopes. These areas can be utilized to develop the agricultural and livestock industries. These central and northeast portions of the province compose a large part of the province (76,720 hectares), but are said to have soil which are not rich enough for cultivation.

In the southern coastal lowlands of Bohol, continuous stretches of coconut trees are planted, to be used as raw materials for the copra industry. Presently, the province is exporting copra to Mindanao and other provinces through the Jagna Port. As of 1975, coconut trees were planted on 37,000 hectares of land, making it one of the major crops of Bohol in terms of area planted together with rice and corn.

Bohol's land areas, especially the grass areas, are not used effectively. They could optimally be used by the livestock industry, potentially one of the most significant sectors in the Bohol economy.

Table 4.1 Land Classification of Bohol, 1946 and 1971

Classification	1946 (June 30)		1971	
	Hectares	(%)	Hectares	(%)
Forest	75,037	18.4	100,493	24.4
Commercial Forest	36,360	8.9	62,585	15.2
Non-Commercial Forest	19,737	4.8	22,328[1/]	5.4
Swamps	18,940	4.7	15,580[2/]	3.8
Open or Alienable & Disposable Land	332,790	81.6	311,233	75.6
Total	407,827	100.0	411,726	100.0

Notes: 1) involve two Re-forestation Projects Area
2) Mangrove forest

Source: Year of 1946: BS, Soil Report Na 15, 1952 P 14
Year of 1971: BFD Office Data & NEDA - NCSO, Bohol 1971

4.2 Fishery and Aquatic Resources

The Bohol Strait, which is located in the northern portion of the province, is one of the richest fishing grounds in the area. The common species found in the strait are the bonito, anchovy, tuna, mackerel, flying fish and round scad species. Bohol's fishing industry appears to be less productive when compared with there of other provinces, and commercial fishing is still a small percentage of the industry as shown in Table 4.2 below. However, Bohol's location is ideal for such an industry.

Table 4.2 Fishery Production in Bohol, in 1977

Type	Production (tons)	Percent
Commercial Fishing	1,713	5.8
Municipal Fishing	27,009	90.7
Inland Fishing	1,048	3.5
Total	29,770	100.0

Source: Fishery Statistics

The potential for growth in the province's fishing industry is in the following areas:

- Development of new fishing grounds
- Introduction of fishing machineries
- Increase in the number of vessels as well as imporvement of the quality of vessels
- Improvement of the fishing ports

4.3 Mineral Resources

Although Bohol has a very little metallic minerals, it has an abundance of non-metallic minerals such as limestone, silica, clay, sand and gravel. Clay is found in Buenavista and silica in Talibon. Limestone is widely distributed in the province. Production of minerals is relatively undeveloped in Bohol as shown in Table 4.3 below.

Table 4.3 Mineral (Non-Metallic) Production in Bohol, (1977)

Mineral		Quantity	Value (Peso)	(%)
Sand and Gravel	(cu. m.)	10,500	399,000	5.4
Feldspar	(mt)	406	55,623	0.8
Limestone	(mt)	506,445	4,699,809	64.2
Silica Sand	(mt)	1,230	51,500	0.7
Silicous Clay	(mt)	946	170,683	2.3
Salt	(mt)	4,746	1,948,866	26.6
Total		-	7,325,481	100.0

Source: Minerals News Service, No. 73 - Bureau of Mines

4.4 Manufacturing Industries

According to the 1974 manufacturing census, out of the total number of 995 manufacturing establishments, there were only five establishments in Bohol employing 20 or more workers, while in Cebu the 156 establishments employed more than 20 workers. Details regarding the large manufacturing firms in Bohol is shown in the following table.

Table 4.4 Large Manufacturing Establishment in Bohol

Number of Establishments	5
Total Employment	223
Paid Employees	210
Total Payroll	₱ 878,000
Total Value of Gross Output	5,719,000
Shipment of Products	5,219,000
Value Added	2,295,000

Source: 1974 Manufacturing Census

Most of the manufacturing firms in Bohol are cottage industry oriented. Raw materials like mangrove, coastal clay, buri, rattan, bamboo and nito are widely distributed in the province for the manufacture of hats, mats, baskets, ceramics and furniture. Although the above mentioned cottage industries now predominate in Bohol, in the future, the province is expected to go into manufacturing market oriented products like textiles, clothing apparel, food and beverages for local consumption. A list of major cottage industries and market-oriented industries is shown below. Although Bohol's population of

800,000 has a low per capita income, it would be a good target for such market-oriented industries.

1) Cottage Oriented Industries

- Food processing industries
- Rice husking and grain mill
- Meat and vegetable processing
- Beverage Industry
- Coconut and vegetable oil industries
- Fish Processing industry
- Feed industry
- Furniture industry
- Handicraft Industry (hat, mat & basket making)

2) Market-oriented Industries

- Clothing Industry; textile & yarn
- Alcohol industry (using cassava)
- Ceramics
- Structural Clay Products
- Fertilizer and Agricultural Chemicals
- Food Industry (pastries)
- Sugar refinery industry

4.5 Tourism Resources

It is said that the main tourist spot of Bohol is the Chocolate Hills of Carmen. However, the Bohol Island is well endowed with a considerable number of beautiful beaches and islets which would also make good tourist attractions. Moreover, there are many historical sites such as the Blood-Compact site, located between Tagbilaran and Baclayon, the Punta Cruz watch tower in Maribojoc and the Baclayon church (one of the oldest churches in the Philippines). These historical sites show some of the potentials for the island's integrated tourism development.

Tourism may prove to be one of the most strategic industries for the development of Bohol.

CHAPTER 5
SOCIO-ECONOMIC DEVELOPMENT OF THE PHILIPPINES AND REGION VII

CHAPTER 5 SOCIO-ECONOMIC DEVELOPMENT OF THE PHILIPPINES AND REGION VII

5.1 Developmental Problems of the Philippines and Region VII, in Accordance with the Long-Term and Five-Year (1978-82) Development Plans

The critical problems which are anticipated by the Philippines in the coming decade are as follows:

(a) Inadequate supply of basic needs (namely, food, shelter and clothing, minimal education) which are essential to the increase in the real per capita GNP.

(b) Income inequality, that is, the lopsided personal and geographical distribution of income and wealth in the country.

(c) Unemployment and underemployment

(d) Heavy pressure of rapid population growth

(e) Imbalance of payment and price instability

(f) Energy constraint

These problems are basically the same kind as those faced by other developing countries.

On the regional level, the Central Visayas (Region VII) is beset by similar problems, which are as follows:

(a) High rate of unemployment and underemployment

(b) Low agricultural productivity

(c) Unequal distribution of income and wealth

(d) High population growth

(e) Low standard of living

(f) Economic imbalance between rural and urban areas

(g) Unplanned physical development

(h) Shortcomings in Public Administration

As can be observed, four problems in Region VII (Items a, c, d and e) are similar to problems faced on the national level. Bohol's economy, in particular, suffers from the same fundamental problems. However, the approach to solving these problems will be somewhat different in Bohol from those of Region VII and the national level, since each has different resources and economic conditions.

5.2 Development Strategies for Long-Term and Five-Year Development Plans of the Philippines in Relation with Region VII

The Long-Term and Five-Year Development Plans of the Philippines cite the following as goals and strategies for development:

5.2.1 Goals

(a) Attainment of self-sufficiency and greater self-reliance in energy

(b) Social development through:

- Promotion of productive employment opportunities
- Reduction in income disparities
- Uplifting of the living standards of the poor

(c) Attainment of a high and sustained economic growth

(d) Maintenance and improvement of major problems with regard to:

- An acceptable price level
- Domestic resource mobilization
- Balance of payment position

(e) Increase in government developmental thrusts lagging regions and rural areas

(f) Maintenance of environmental stability and improvement of habitat

(g) Maintenance of internal security and harmonious international diplomatic relations.

5.2.2 Strategy

In attaining the aforementioned objectives, the development strategy is basically two-pronged:

(a) Attainment of a dynamically-balanced economy, particularly through:

- Increased agricultural and industrial production
- Trade diversification and rationalization
- Application of science and technology
- Proper management of environment

(b) Fuller and more efficient utilization of human and natural resources in nation-building through:

- Moderation of population growth
- Rationalization of provision for social services, such as, housing and social welfare

- Utilization of manpower resources, particularly the promotion of entrepreneurship for small projects

5.3 Development Strategy for Region VII

The objectives of the plan for Region VII remain basically unchanged and are similar to those of the Philippines as a whole. However, because of the differences in resources, the approach on the regional level will be somewhat different than that of the national level.

The development strategy for Region VII can be summarized as follows:

(a) High priorities for industrial expansion, particularly in:

- Promotion of footloose industries
- Development of mineral resources and associated processing of goods

(b) To correct marked disparities in development between the rural areas and the major cities

(c) To improve the low levels of agricultural production through:

- More use of fertilizers and other inputs
- More infrastructure support in terms of irrigation
- The pursuance of agrarian reform, especially the cultivation of marginal land as in Bohol

(d) Eradication of communicable diseases

(e) In terms of education, training of teachers to improve their competence level

(f) Housing strategy to provide low-cost housing to low-income level families through a 60% government subsidy.

(g) Top priorities for infrastructure development would be highway and electrification programs.

(h) Increase in tourism traffic through an intensive promotional program.

5.4 Role of Bohol Economy in Region VII

Because of Bohol Province's location in the central zone of the central Visayas (Region VII), geographically near Cebu City, Bohol's Economy, especially the economy of the western portion of the province depends on and is deeply affected by the Cebu economy. Thus, in order to develop Bohol's economy, it is necessary to promote more active trade relations between Bohol and the other provinces of

Region VII, particularly with Cebu.

The roles played by the Bohol economy in Region VII, are summarized in the following:

(a) Supplier of major crops to Cebu

(b) Supplier of major fishing products (both raw and processed)

(c) Supplier of consumer goods (i.e., agro-processed and cottage industry products)

(d) Consumer of manufactured goods (i.e., agricultural goods, fertilizer and agricultural machinery and transportation equipment)

(e) Vacation and resort area for Cebuanos and tourists

(f) Supplier of surplus labor force for Cebu

Promotion of these roles, on a wider scale, is recommended in order to improve Bohol's economic growth.

5.5 Development Objectives for a Long-Term Plan of Bohol, in Relation to the Development Plans of the Philippines and Region VII

The development objectives of Bohol, in relation to the regional and national plans are summarized as follows:

- To increase the per capita income to the extent of reducing the income level differences with the national average level.
- To increase the production levels of major crops through increasing the yield per hectare and expansion of harvest area by means of infrastructural support.
- To increase the production levels of fishery by means of developing fishing ports and related facilities.
- To promote livestock and related industries.
- To promote and diversify manufacturing industries.
- To have a more efficient utilization of manpower resources.
- To provide social services.

CHAPTER 6
DEVELOPMENT OBJECTIVES AND STRATEGIES OF BOHOL PROVINCE

CHAPTER 6 DEVELOPMENT OBJECTIVES AND STRATEGIES OF BOHOL PROVINCE

6.1 Overall Objectives and Strategies of the Development Plan

The fundamental development goals of the Bohol province are to ameliorate the underdeveloped state of its economy and to uplift the level of income of the Boholanos to the national average level. The attainment of these goals, however, will necessitate a large amount of investment and a considerable length of time.

In the present development plan for Bohol, a balanced development approach based on a realistic evaluation of the economic and social resources of the province is proposed instead of a growth oriented one. As a result, various goals such as the preservation of environment, control of inflation, and reduction of income disparity as well as acceleration of economic growth must be simultaneously aimed at.

However, the present level of income of the Bohol province lies far behind that of the national level. The main goal of the development of Bohol should, therefore be, to reduce this income disparity, and the steps involved in this development strategy will be as follows:

Step 1: Preparation of Development

- Establishment of an overall development framework.
- Evaluation of development resources.

Step 2: Implementation of Development

- Improvement of infrastructure -- especially of irrigation and electric power facilities.
- Development of human resources -- improvement of education and skill training

Step 3: Accelaration of Development

- Improvement of priority sectors -- development of agriculture, fishery and livestock industries.
- Development of strategic sectors -- promotion of light industries and tourism industry.

Step 4: Maturity of Development

- Reinforcement of primary industries.
- Expansion of secondary and tertiary industries.

Up to Step 2, however, the Bohol economy will not attain a very high growth rate and the income disparity, far from being reduced, will be enlarged. It is only in the latter stages of development that the

reduction of income disparity will be achieved.

The long range development plan of Bohol province will be formulated so as to achieve the general objectives spelled out in the following:

6.1.1 Reduction of Regional Income Disparity

Since the Government of the Philippines considers that the gradual elimination of regional income disparities existing between different regions is one of the most important national goals, highest priority should be given to the attainment of this goal. On the basis of the realistic evaluation of the development potentials for Bohol, it is to be assumed that the income level of Bohol should reach at least half of the level of the Philippines by the year 2000 in terms of per capita income. The projected income per capita targets for Bohol are given in Table 6.1

Table 6.1 Target of Per Income in Bohol in Real Terms

(Unit: Peso)

	1971	1975	1985	2000
Bohol	426	683	844	2,055
Philippines	634	2,029	2,709	4,406
Ratio of Bohol	67%	34%	31%	47%

(Note: For more details, see Appendices 6.1 and 6.2)

6.1.2 Accelerated Economic Growth and Public Investment

In order to attain this long range goal, it is considered imperative that the economic growth rate of Bohol should be accelerated by active government public investment policy measures to stimulate the Bohol economy.

6.1.3 Development of High Priority Industries

As explained before, the Bohol economy has suffered from a vicious circle of economic stagnation produced by the combined effects of many factors: retarded development of industrial infrastructure, lack of financial resources, low endowment of natural resources, low level of productivity, etc. In order to break the vicious circle, concentrated efforts should be exerted upon the development of industries which have strategic importance for the Bohol economy. Such industries are the agriculture and fishery industries whose development potentials are judged to be relatively higher than other types of industries.

6.1.4 Enhancement of Equity Among Population

In spite of the fact that a serious mal-distribution of income has not existed in Bohol, it is expected that as the scale of economy becomes enlarged, so the income gap will also be expanded. An equitable distribution of income and wealth should become a matter of serious consideration for the decision makers of the Bohol Government.

6.1.5 Employment Generation

A high rate of unemployment and underemployment has been a serious problem besetting Bohol as well as the rest of the Philippines. In consideration of the relatively high rate of population growth as against the low rate of economic growth, it is highly likely that the unemployment problem will remain a serious socio-economic problem in Bohol. In the light of this, any development policy in Bohol should be enacted by taking into consideration the urgent need of providing employment opportunities. The table below indicates the growth expectations for employment.

Table 6.2 Projection of Employment by Sector

(Unit: persons (%))

	Actual 1975	Employment Target 1980	1985	1990	Annual Growth Rate(%) 1985/1980	1990/1985
Agriculture, Fishery & Forestry	150,790 (64.8)	164,690 (64.8)	175,380 (63.6)	185,840 (60.7)	1.3	1.2
Secondary & Primary Industry	32,787 (14.1)	35,810 (14.1)	40,750 (14.8)	50,810 (16.6)	2.6	4.5
Rest of Economy	49,247 (21.1)	53,790 (21.1)	59,500 (21.6)	69,410 (22.7)	2.0	3.1
Total All Sectors	232,824	254,290	275,630	306,060	1.6	2.1

6.1.6 Development of Infrastructure

The development of infrastructure in Bohol has lagged far behind the rest of the Philippines for various reasons: 1) the geographical distance from Metro Manila, 2) the centralism in economic policy making, 3) the lack of financial resources, 4) the absence of political power, 5) lower order priority being placed upon Bohol, etc. It is believed that the Boholanos have undergone a long period of frustration with little interest or attention so far paid to their urgent need for improving the industrial and social infrastructure in Bohol. This fact must also be taken into a serious consideration in deciding a long range development plan for Bohol.

6.1.7 Development of Concerted Efforts of Public and Private Sectors

The Public investment must be also supported by the private sector in order to activate the Bohol economy. The Boholanos are highly regarded as hard workers and their work has been in great demand outside Bohol. Partly because of this and also because of the lack of employment opportunities in Bohol, their mental outlook has been outward-looking always seeking a better place or job outside Bohol. Hence outmigration has been a marked trend in Bohol. In order to stop this, a private sector needs to be developed as quickly as possible so as to induce the Boholanos to remain in their native place. Much needed is the concerted endeavors of both public and private sectors to jointly participate in their on-going concern of how to better Bohol economy. This will bring about the capital accumulation and development of management know-how and industrial skills much needed for the acceerated economic development of Bohol.

6.2 Development Targets of Bohol Economy

In order to attain the overall development objectives described in the preceding section, it is proposed that the following targets should be spelled out as the planning parameters of a socio-economic development of Bohol.

6.2.1 Economic Growth Rate

a) An annual average growth rate of 4.5% is considered a desirable as well as feasible target for the Bohol economy in the first half of 1980's. The reasons are as follows:

- Most of non-oil producing developing countries will face serious bottlenecks for high economic growth, e.g., the rising price of oil, the worsening terms of trade, the unfavorable balance of payment and the accumulated external debt, etc.

- Bohol's economic growth rate, measured by Net Provincial Products (NPP) will be lower than that of the national economy because of relative disadvantages existing in Bohol.

- The annual average growth rate of 8.1% of Gross Regional Domestic Product (GRDP) expected for the economic development of the Central Visayas, (1978-82) is regarded as an unrealistic target for Bohol.

- On the other hand, the growth rate of 4.5% is regarded as a feasible target if the labor productivity increases as a result of the public investments made in the industrial infrastructure, primarily in the agriculture and fishery sectors.

b) An annual average growth rate (NPP) of 6.0% is considered as a realistic target for the Bohol economy in the second half of 1980's. The reasons stem from the following:

- The production growth of the primary sector will show a steady growth as a result of the cumulative effects of the investment made in the first half.

- Secondary industries will be taking-off on the basis of capital formation, improvement of industrial infrastructure, and development of technical know-hows which have been carried out in the first half.

- In parallel with the development of primary and secondary industries, a tertiary industry in Bohol will also grow at a steady rate of 5.1% per annum as shown in Table 6.3 below.

Table 6.3 Annual Growth Rate by Sector

	1980-85	1985-90	1990-2000
Primary industries	4.0%	4.2%	5.9%
Secondary industries	5.9	8.9	13.5
Rest of Economy	5.1	8.8	11.4
Total	4.5%	6.0%	9.0%

(Note: The detailed target for Bohol's Net Product is shown in Appendix 6.3.)

6.2.2 Structural Change in Industries in Bohol

In consequence of the varied growth rates of industries in Bohol, the industrial structure will be changed from a primary industry-oriented one to a more balanced development of various industries as shown below.

Changing Share of NPP (%)

	1980	1985	1990
Primary Industry	64.8	63.1	58.1
Secondary Industry	14.0	14.9	17.1
Tertiary Industry	21.2	21.8	24.8

6.2.3 Per Capita Income Growth

The changing levels of per capita income in Bohol are projected before in Table 6-1 indicate the following trends.

(a) The annual growth rate of per capita income from 1975 to 1985 is estimated at 2.1%.

(b) However, afterwards the growth rate will increase to level of 6.0% per annum during the period 1985-2000,

partly because of the decrease in the population growth rate.

(c) As a result of the rising trend of per capita income in Bohol, income disparity will be reduced in the year 2000 to the extent that Bohol's per capita income will just become a half of the national level.

6.2.4 Population Growth in Bohol

The future population of Bohol has been projected as shown below by using the medium growth rate assumption of National Census and Statistics Office (NCSO). The following remarks summarize the main features of the future population in Bohol.

(a) The population of Bohol will increase to a level of 877,610 in 1985 which will account for about 21% of the total population of Region VII.

Table 6.4 Projected Population by BIAD

BIAD	Actual	Projected		Annual Growth Rate	
	1975	1985	2000	1985/1975	2000/1985
I	185,129	221,340	298,490	1.8	2.0
II	183,480	213,260	274,670	1.5	1.7
III	150,887	179,220	237,130	1.7	1.9
IV	135,543	152,680	189,110	1.2	1.4
V	104,331	121,110	155,870	1.5	1.7
Total BOHOL	759,370	887,610	1,155,270	1.6	1.8

(Note: For details by Municipality, see Appendix 6.4.)

(b) The population growth rate of Bohol is estimated at 1.6% per annum which is below the regional rate as shown in Table 6.5

Table 6.5 Projected Population by Province: 1975-1985

Location	Annual Growth Rate
Bohol	1.6%
Cebu	2.4%
Negros Oriental	1.8%
Siquijor	1.0%
Region VII	2.1%

Source: NCSO

(c) The population density of Bohol was 180 persons per

sq.km. in 1975 which was higher than the national average of 142 persons per sq.km. Bohol's population density is projected to be 217 persons per sq.km. in 1989.

6.3 Economic Sectoral Objectives, Targets and Strategies

6.3.1 Agriculture

1. Objectives

The main objective in agriculture is to improve the standard of living of rural inhabitants. This should be done through the upgrading of farm income level, by increasing food production in the rural areas. This is most significant, particularly in Bohol, where agriculture is the most important and strategic sector of the economy.

The major objectives are the following:

(a) Maximization of food and feed production.

(b) Increasing productive employment opportunities by introducing new agricultural technology.

(c) Optimum utilization of the province's resources.

- Restraining soil erosion

- Implementing reforestation projects

2. Targets

As mentioned earlier, the projected annual growth rate of the primary sector in terms of NPP is 4.0 per cent from 1980-1985. The target variables of the main commodities are shown on Tables 6.6 and 6.7.

(a) Palay

Palay production in Bohol was placed at 70,461 metric tons in 1971. However, with the improvement of infrastructure facilities, most especially of irrigation, the figure is projected to increase to 107,300 metric tons by 1985. The increase will mean an annual growth rate, during this period, of 3.0 per cent. The projected increase in production will depend mainly on the increase of the yield per hectare.

(b) Corn

Corn may prove to be a very important crop in Bohol, since there is a possibility of increasing its production in a relatively short span of time. The corn production target in 1985 is 27,900 metric tons. This

target level of procuction is one and a half times higher than that of 1971.

(c) Other Agricultural Products

Other agricultural products such as coconut, sugar cane and fruits, are also projected to increase in production. One way to realize this production is through the introduction of high yielding varieties. As shown in Tabble 6-6, the rate of production of these products are projected to increase by four to six percent annually.

3. Strategies

The agricultural development strategies are summarized as follows:

(a) Development of linkage projects for increasing productivity, supported by government.

- Adequate irrigation (both large and small-scale)
- Effective land transfer scheme
- Efficient use of fertilizers and agriculture chemicals
- Improvement of soil and land utilization

(b) Implementation of incentive policies for increasing production.

- Subsidies or financial support policy for strategic agricultural products
- Expansion of agricultural market by shortening multi-tiered distribution system and extending more credits for related activities.

(c) Expansion of farm crop industry through compact farming.

6.3.2 Livestock

1. Objective

Increasing the livestock productivity is one of the most important factors in developing Bohol's economy. In this connection, the main objective of this sector is to attain self-sufficiency in terms of meat and milk products in the years to come.

2. Targets

The average consumption of meat in Region VII is estimated to be 12.02 kg. per year, which is equivalent to only 55 per cent of the national nutritional requirement. However, according to the Region VII Development plan, this figure is projected to increase

Table 6.6 Projected Production of Palay and Corn, Bohol and Region VII

	Unit	Actual		Projected			Annual Growth Rate (%)	
		1960	1971	1980	1985	1990	1985/1980	1990/1985
BOHOL								
Palay								
Production	Mt	42,869	70,461	90,340	107,300	135,650	3.5	4.8
Effective Crop Area	Ha	44,883	51,306	56,110	60,740	69,390	1.6	2.7
Yield	Mt/Ha	0.96	1.37	1.61	1.77	1.95	1.9	2.0
Corn								
Production	Mt	14,029	18,642	23,490	27,900	33,300	3.5	3.6
Effective Crop Area	Ha	24,549	27,225	29,510	32,420	36,150	1.9	2.2
Yeild	Mt/Ha	0.57	0.68	0.80	0.86	0.92	1.5	1.4
REGION VII								
Palay Production	Mt	-	-	5,937,628	8,366,134[a]	-	5.0	
Corn Production	Mt	-	-	1,507,548	1,996,169[a]	-	4.1	

Note: a) ... Production in 1987

Source: Census of Agriculture

Table 6.7 Projected Agriculture Production for Major Crops in Bohol and Region VII 1980 - 1990 (Exluding Palay and Corn)

Crop	Unit	Actual		Target			Annual Growth Rate (%)	
		1960	1971	1980	1985	1990	1985/1980	1990/1985
BOHOL								
Sugar Cane	Mt	2,982	9,937	16,790	20,620	25,570	4.2	4.4
Coconut	Thousand nuts	92,457	67,112	80,210	95,260	115,900	3.5	4.0
Abaca	Mt	150	194	240	270	300	2.3	2.1
Tobacco	Mt	40	93	140	180	240	5.2	5.9
Root Crops	Mt	29,478	27,382[a]	32,720	39,810	48,430	4.0	4.0
Fruits & Nuts	Mt	22,519	34,822	49,560	66,320	93,020	6.0	7.0
Coffee	Mt	42	107	170	220	280	5.3	4.9
REGION VII								
Fruits	Mt	-	-	474,881	933,404[b]	-	10.1	-
Vegetables	Mt	-	-	109,629	138,150[b]	-	3.4	-
Root Crops	Mt	-	-	245,400	399,025[b]	-	7.2	-
Coconut	Thousand nuts	-	-	1,379,800	1,556,300[b]	-	1.7	-

Note: a) ... Total of Camote, Cassave, Gabi, and Ubi
b) ... Production in 1987

Source: Census of Agriculture

rapidly in the coming years, and will maintain a 7.0 per cent annual growth rate.

Target of Livestock production and Requirement (unit: metric ton)

	1978	1982	1987	Annual Growth rate(%)
Production	49,556	75,988	127,166	11.0
Requirement	50,637	73,605	92,836	7.0
Surplus (export)	-1,081	+2,383	+34,330	-

Source: NEDA

Figures on Livestock breeding by kind of livestock are shown in Table 6.8.

3. Strategies

(a) Implementation of incentive policies

- Subsidies or financial support policy for Livestock Production.

- Full government support, in terms of credit, guarantees, and technical assistance.

(b) Improvement, as well as, construction of needed facilities.

6.3.3 Fishery

1. Objectives

Bohol is believed to be richly endowed with marine and fishery resources. However, the existing resources have not yet been fully exploited and still remain underdeveloped. In this regard, the main objective of this sector is, therefore, increase fish production, not only to attain self-sufficiency, but also, to be capable of exporting to markets outside Bohol.

2. Targets

The total fish production of Bohol was registered at 29,770 metric tons in 1977. This figure is projected to increase to 48,580 metric tons in 1985 as shown in Table 6.9.

3. Strategies

The following strategies are deemed necessary in increasing the fish production in Bohol.

(a) Improvement of fishing ports

- Improving medium-scale ports for commercial fishing.

- Improving small-scale ports for municipal fishing.

Table 6.8 Projected Number of Livestock

Item	Actual		Projected		Annual Growth Rate (%)	
	1971	1978	1985	1990	1985/1978	1990/1985
BOHOL						
Carabao	73,035	97,010	115,310	130,460	2.5	2.5
Cattle	31,498	59,150	77,840	94,700	4.0	4.0
Horse	2,052	n.a.	3,100	3,590	3.0	3.0
Goat	11,726	n.a.	18,980	22,540	3.5	3.5
Hog	126,524	220,680	290,400	353,320	4.0	4.0
Chicken	864,832	1,487,890	1,957,960	2,382,160	4.0	4.0
REGION VII						
Carabao	-	280,495	560,701[a)]	-	8.0	
Cattle	-	290,918	690,789[a)]	-	10.0	
Goat	-	240,356	480,461	-	8.0	
Hog	-	1,349,446	5,131,824[a)]	-	6.0	
Poultry	-	4,844,172	9,056,551[a)]	-	7.2	

Note: a)... Projection in 1987

Source: Census of Agriculture

Table 6.9 Projected Fish Production

(Unit: Metric Ton)

Type	Actual		Projected			Annual Growth Rate (%)	
	1970	1977	1980	1985	1990	1985/1980	1990/1985
BOHOL							
Fishpond	724	1,048	1,250	1,710	2,450	6.5	7.5
Municipal Fishing	-	27,009	32,170	44,080	63,280	6.5	7.5
Commercial Fishing	506	1,713	2,040	2,790	4,010	6.5	7.5
Total	-	29,770	35,460	48,580	69,740	6.5	7.5
REGION VII							
Fishpond	-	11,822[b)]	13,129	18,980[c)]	-	7.6	-
Municipal Fishing	-	85,712[b)]	95,123	137,136[c)]	-	7.6	-
Commercial Fishing	-	41,378[b)]	43,731	54,189[c)]	-	4.4	-
Total	-	147,779[b)]	161,619	220,941[c)]	-	6.5	-

Note: b) Target Production in 1978

c) Target Production in 1987

Source: Fishery Statistics and NEDA Region VII's Fishery Statistics

(b) Exploitation of new fishing zones, excluding deep-sea fishing zones.

(c) Establishment of effective marketing policies for fishery.

6.3.4 Secondary Industry

1. Objectives

Manufacturing industries must be developed as quickly as possible to serve the following purposes;

- Contribution to a rise in the Net Provincial Product in Bohol.
- Creation of more employment opportunities
- Diversification of industry and development of market oriented industries.

2. Targets

The annual growth rates for secondary industry are targeted at 5.9% from 1980 to 1985, 8.9% in 1985 - 1990, and 13.8% in 1990 - 2000. The projected value of NPP is ₱112 million, ₱171 million and ₱605 million in 1985, 1990, 2000 respectively.

3. Strategies

In order to achieve these targets the following strategies are recommended:

(a) Measures must be taken to secure a stable supply of electricity, industrial water and raw materials.

(b) A proper industrial location must be selected in the Tagbilaran Industrial Estate area to generate agglomeration effects.

(c) Separate industrial development policies should be applied for two types of industries: one is market oriented and the other is labor intensive.

(d) Provision of manpower training programs specifically geared toward skills required for individual industries.

Priority Manufacuring Industries for Bohol

Meat and Vegetable Processing
Coconut and Vegetable Processing
Handicraft for Export
Furniture for Export

Construction Materials
Feed and Grain Mill
Light Machinery
Figh Processing
Ceramics
Alcogas Refinery
Seaweed Processing

6.3.5 Tourism

1. Objectives

The tourism industry is also a strategic industry in Bohol which requires concentrated development to cater to both domestic and foreign tourists.

2. Targets

The targeted growth rates of tourist arrival are 13.2% in the first half of the 1980's and 16.3% in the second half of the 1980's as shown in Table 6.10.

Table 6.10 Projected Tourists Arrivals

(Unit: Persons)

Type of Tourist	Actual		Projected			Annual Growth Rate(%)	
	1973	1977	1980	1985	1990	1985/1980	1990/1985
Domestic	650	4,200	6,700	12,900	28,390	14.0	17.1
Foreign and Balikbayan	110	980	1,370	2,100	3,510	8.9	10.8
Total	760	5,180	8,070	15,000	31,900	13.2	16.3

Source: Provincial Trade and Tourism Committee and Ministry of Tourism, Region VII Field Office.

3. Strategies

The following strategies are recommended:

(a) Development of selected tourist spots i.e. Chocolate Hills, Baclayon and Panglao.

(b) Development of infrastructure in these areas.

(c) Intensive promotion activities.

6.4 Objectives, Targets and Strategies of Infrastructure

Indispensable for the socio-economic development in Bohol is the improvement of industrial infrastructure which can directly contribute to an increase in production. The infrastructure most crucial for industrial expansion is irrigation, transportation systems and energy

supply. Brief remarks on them shall be given in the following paragraphs.

6.4.1 Irrigation System

Although agriculture is the major economic sector in Bohol, its productivity remains low due primarily to the lack of an effective irrigation system in Bohol. In view of the critical importance for the Bohol economy, the highest priority should be given to the development and improvement of the irrigation system in Bohol.

1. Objectives and Targets

- Optimum utilization of water resources available in Bohol to fully irrigate the total potential irrigable area.
- To take the necessary measures to increase the production of the unit land area.

2. Strategies

- Early implementation of the Wahig-Pamacsalan River Irrigation Project.
- Development of communal irrigation systems most effective to raise the agricultural productivity of Bohol.

6.4.2 Transport System

Bohol is located in strategic proximity to Metro Cebu, and it is expected that sea traffic between Cebu and Bohol will expand in the future as the Bohol economy becomes closely linked with Metro Cebu.

1. Objectives

- A total transport system should be developed in Bohol comprising the air, land and sea transport modes.
- Major ports and national roads must be improved according to the growth of traffic demand.

2. Strategies

- The capacities of the major ports, Tagbilaran, Tubigon and Jagna, should be expanded so as to effectively accommodate the increasing demand of passenger and cargo traffic.
- These three major ports should be connected with each other by a national road network system.
- In the light of the increasing demand for air flight, the facilities of Tagbilaran airport should be improved.

6.4.3 Energy

The low level of per capita energy consumption (see App. 6-5) is primarily the result of the economic underdevelopment of Bohol. In addition, the rising price of oil has started causing a serious economic problem for Bohol. The economic development of Bohol could be greatly facilitated by the use of locally available source of energy, e.g. hydro-electric power and renewable energy.

1. Objectives

The objective is to achieve a substantial degree of self-sufficiency in energy while retaining the high growth rate of the economy.

2. Tatgets

In the short term the target is to develop an energy equivalent of 98×10^3 BOE by hydro-energy and 30×10^3 BOE by nonconventional source of energy. In the medium term, the target is to tap 1×10^5 BOE by nonconventional sources and to tap 1.9×10^5 BOE by hydro-sources.

3. Strategies

To reduce the dependency on fossil energy with an optimum mix of primary energy; i.e., alcogas, biogas, wind/solar energy must be developed. Especially for the rural electrification the extensive use of nonconventional energy should be promoted.

6.4.4 Communication

Since Bohol population is dispersed, all over the island without heavy concentration in a particular area, it requires an effective communication system. The communication network existing in Bohol is presently insufficient.

1. Objectives

- As a minimum requirement all municipalities must be provided with telegraph service.

- Major growth poles and centers of Bohol should be linked with each other by telephone at the earliest possible time.

2. Strategies

- Immediate implementation of a telegraph service program by which all municipalities will become able to acquire a minimum means of external communication.

- The priority connection of Tagbilaran, Tubigon, Ubay, Jagna and Carmen with each other by telephone service.

6.5 Objectives, Targets and Strategies of Social Services

Measured by any social indicators, Bohol is classified as one of the depressed provinces in the Philippines with an extremely low level of social amenities. In light of this, proper provision of social service should, therefore, be viewed critically.

6.5.1 Human Resource Development and Education

Inspite of the fact that the literacy rate in Bohol is relatively high as compared with that of the rest of Region VII, the school drop-out rate remains a serious problem; in addition, there is a lack of manpower training facilities with programs most suited for Bohol.

1. Objectives

   - Reduction of rate of outmigration.
   - Provision of manpower training services geared towards the specific requirements of Bohol's industrial development.
   - Educational policy for the improvement of Bohol's school facilities and other related infrastructure.

2. Strategies

   - Establishment of manpower training centers in Bohol
   - Administrative coordination of vocational and skill training programs in Bohol.
   - Gradual improvement of secondary schools, teaching staff, and curriculum design.

6.5.2 Public Health

Public health is one of the major components of the social well being and public amenities. The level of public health services provided for the population is closely associated with the level of their income. However, there are a variety of problems requiring immediate actions.

1. Objectives

   - Elimination of malnutrition of infants
   - Reduction of morbidity and mortality rates
   - Prevention of communicable disease
   - Improvement of health care facilities.

2. Strategies

- Early diagnostic treatment and public health education.
- Establishment of medical referral system.
- Improvement of anti-schistosomiasis policies and measures.
- Attainment of health care standards per unit of population; e.g., Rural Health Units 1:20,000, Barangay Health Centers 1:5,000, hospital beds 1:1,000, Diagnostic Center 1 per province, etc.

6.5.3 Community Development

Bohol is basically an agricultural society in which close human association is highly valued. The formal organization of such association is one of the means by which mutual assistance could most fruitfully be increased to directly contribute to the rise of productivity and social welfare.

1. Objectives

- Development of industry and track oriented organizations such as cooperatives of farmers and fishermen.
- Reinforcement of facilities and activities of "Samahang Nayon" through which rural community development is expected.
- Provision of cultural, recreational and information services.
- Adult education.

2. Strategies

- Improvement of local service facilities.
- Close coordination of services administered by various public organizations, e.g., MEC, MLGCD, NMYC, etc.

6.5.4 Housing

Urbanization is one of the unavoidable tendencies closely related to the socio-economic development. Residential zoning, prevention of slum area, prevention of dilapidation of houses and steady supply of housing against increasing population will become a problem to be considered in the future Bohol society.

1. Objectives

- Provision of low-cost housing in the urban area.
- Proper zoning of residential area.

- Improvement of infrastructure, i.e. drinking water supply.

- Gradual Improvement sanitary conditions.

2. Strategies

- Construction of model houses suited to natural environment of the locality.

- Provision of credit facilities.

- Use of prefabricated materials.

APPENDIX

Appendix 6-1

Per Capita Income

	Income (Thousand Pesos)	Estimated Population	Per Capita Income (Pesos)	Relative Index of Per Capita Income (Bohol:100)
(1971)				
Bohol	305,701	717,613	426	100
Cebu	809,374	1,740,890	465	109.2
Cebu-Urban	388,622	602,962	645	151.4
Philippines	23,716,284	37,378,983	634	148,8
(1975)				
Bohol	518,580	759,370	683	100
Cebu	2,153,979	1,818,410	1,185	173.5
Cebu-Urban	833,123	746,642	1,116	163.4
Philippines	85,354,000	42,070,660	2,029	297.1

Source: National Census and Statistics Office

Appendix 6-2

Target of Per Capita Income (at Constant Prices of 1975)

	Actual 1975	1980	1985	1990	2000
Bohol					
Total Income (Million Pesos)	518.6	601.2	749.2	1,002.6	2,373.7
Total Population (Thousand)	759.4	821.0	887.6	969.1	1,155.3
Per Capita Income (Pesos)	683	732	844	1,035	2,055
Ratio to Philippines	34%	31%	31%	33%	47%
Philippines					
Total Incoem (Million Pesos)	85,354	114,626	153,395[a]	205,277[a]	367,620[a]
Total Population[b] (Thousand)	49,071	49,137	56,618	65,190	83,439
Per Capita Income (Pesos)	2,029	2,333	2,709	3,149	4,406

Note: a).. Annual growth rate is assumed 6%

b).. Medium assumption by NCSO

Target for Bohol's Net Product (at Constant Prices of 1975)

(Unit: Thousand Pesos,(%))

	1975(est.)	1980	1985	1990	2000	1985/1980	1990/1985	2000/1990
Agriculture, Fishery & Forestry	336,040 (64.8)	389,560 (64.8)	473,960 (63.3)	582,210 (58.1)	1,035,190 (43.6)	4.0	4.2	5.9
Industry Sub-Total	72,601 (14.0)	84,180 (14.0)	112,100 (14.9)	171,380 (17.1)	605,470 (25.5)	5.9	8.9	13.5
Mining	519 (0.1)	600 (0.1)	700 (0.1)	890 (0.1)	1,590 (0.1)	3.1	4.9	6.0
Manufacturing	63,785 (12.3)	73,950 (12.3)	96,650 (12.9)	146,670 (14.6)	515,790 (21.7)	5.5	8.7	13.4
Construction	7,779 (1.5)	9,020 (1.5)	13,690 (1.8)	21,950 (2.2)	80,660 (3.4)	8.7	9.9	13.9
Electricity, Gas and Water	518 (0.1)	610 (0.1)	1,060 (0.1)	1,870 (0.2)	7,430 (0.3)	11.7	12.0	14.8
Rest of the Economy Sub-Total	109,939 (21.2)	127,440 (21.2)	163,120 (21.8)	249,040 (24.8)	733,030 (30.9)	5.1	8.8	11.4
Transportation	9,853 (1.9)	11,420 (1.9)	15,720 (2.1)	24,060 (2.4)	74,560 (3.1)	6.6	8.9	12.0
Commerce	32,670 (6.3)	37,870 (6.3)	50,200 (6.7)	73,190 (7.3)	220,370 (9.3)	5.8	7.8	11.7
Service	57,044 (11.0)	66,130 (11.0)	82,220 (11.0)	131,740 (13.1)	390,630 (16.5)	4.5	9.9	11.5
Industry not Adequately Described	10,372 (2.0)	12,020 (2.0)	14,980 (2.0)	20,050 (2.0)	47,470 (2.0)	4.5	6.0	9.0
Bohol Net Product	518,580 (100.0)	601,180 (100.0)	749,180 (100.0)	1,002,630 (100.0)	2,373,690 (100.0)	4.5	6.0	9.0

Appendix 6-4

Projected Population of Municipalities, Bohol (1)

	Actual 1975	Projected 1985	2000	Annual Growth Rate(%) 1985/1975	2000/1985
BIAD I	185,129	221,340	298,490	1.8	2.0
Tagbilaran	37,335	53,020	86,380	3.6	3.3
Antequera	11,130	11,960	14,000	0.7	1.1
Maribojoc	14,333	15,880	19,270	1.0	1.3
Cortes	9,056	10,330	12,980	1.3	1.5
Balilihan	13,912	16,290	21,250	1.6	1.8
Corella	5,286	6,140	7,880	1.5	1.7
Sikatuna	5,169	5,550	6,490	0.7	1.0
Baclayon	10,490	12,430	16,340	1.7	1.8
Alburquerque	6,505	7,420	9,320	1.3	1.5
Loay	11,256	12,160	14,330	0.8	1.1
Lila	8,728	9,990	12,600	1.4	1.6
Loboc	11,799	13,610	17,330	1.4	1.6
Sevilla	8,551	9,770	12,920	1.3	1.5
Douis	17,955	21,140	27,570	1.6	1.8
Panglao	13,624	15,650	19,830	1.4	1.6
BIAD II	183,480	213,260	274,670	1.5	1.7
Tubigon	28,275	32,490	41,180	1.4	1.6
Loon	34,225	38,480	47,520	1.2	1.4
Calape	21,499	25,180	32,840	1.6	1.8
Catigbian	15,570	18,960	25,730	2.0	2.1
Clarin	13,105	15,350	20,020	1.6	1.8
Inabanga	31,820	35,870	44,440	1.2	1.4
Buenavista	15,802	19,490	26,850	2.1	2.2
Jetafe	15,903	18,910	24,960	1.7	1.9
San Isidro	7,281	8,530	11,130	1.6	1.8
BIAD III	150,887	179,220	237,130	1.7	1.9
Talibon	41,270	51,840	73,000	2.3	2.3
San Miguel	11,117	13,020	16,980	1.6	1.8
Alicia	14,770	16,750	20,910	1.3	1.5
Mabini	19,071	21,890	27,710	1.4	1.6
Trinidad	13,867	16,920	23,020	2.0	2.1
Ubay	34,195	40,050	52,230	1.6	1.8
Pitogo	16,597	18,750	23,280	1.2	1.5
BIAD IV	135,543	152,680	189,110	1.2	1.4
Jagna	21,895	25,780	33,620	1.6	1.8
Candijay	19,750	22,010	26,910	1.1	1.3
Guindulman	23,563	26,530	32,820	1.2	1.4
Anda	12,658	14,010	16,980	1.0	1.3
Duero	11,522	13,110	16,420	1.3	1.5
Garcia-Hernandes	16,701	18,210	21,690	0.9	1.2
Valencia	18,229	20,660	25,750	1.3	1.5
Dimiao	11,225	12,370	14,920	1.0	1.3
BIAD V	104,331	121,110	155,870	1.5	1.7
Carmen	23,580	26,500	32,710	1.2	1.4
Bilar	12,226	14,000	17,670	1.4	1.6
Sagbayan	12,500	15,530	21,580	2.2	2.2
Danao	8,447	9,890	12,900	1.6	1.8
Dagohoy	8,578	9,790	12,310	1.3	1.5
Pilar	13,928	16,310	21,270	1.6	1.8
Sierra-Bullones	15,132	17,720	23,110	1.6	1.8
Batuan	9,940	11,370	14,320	1.4	1.5
Total Bohol	759,370	887,610	1,155,270	1.6	1.8

Appendix 6-5

Electric Power in Bohol, Region VII and the Philippines (1974)

Area	Total Installed Capacity	Total Generated Energy	Total Population	Per Capita Consumption
Philippines	3,120 MW	11,924 GWh	42,500,000	281 KWh
Region VII	387 MW	1,405 GWh	3,200,000	439 KWh
Bohol	4.7 MW	10 GWh	730,000	13.7 KWh

Source: NPC and World Bank Report

PART II

SECTORAL DEVELOPMENT PROGRAMS AND PROJECT

CHAPTER 7
STRETEGY AND METHODS OF PROGRAM & PROJECT PLANNING

CHAPTER 7 STRATEGIES AND METHODS OF PROGRAM AND PROJECT PLANNING

7.1 Introduction

7.1.1 A Summary and Description of Part I: Provincial Development Framework

The primary objective of Part One is to provide a general framework for the socio-economic development of the Bohol province. The framework is intended to serve as a general guideline for the long range development plan of Bohol. Some of the major points discussed are summarized as follows:

1. Development potentials of Bohol

   1) Existence of unexploited land and marine resources.

   2) High potential for the development of primary and secondary industries oriented to Metro Cebu; the major growth pole and consumer market in Region VII.

   3) Existence of surplus manpower which could be diverted to growth-oriented and labor intensive industries.

2. Highest priority given to the expansion of agricultural sector

   1) Development of irrigation system

   2) Promotion of demand for agricultural commodities outside Bohol, viz., export to Metro Cebu.

   3) Development of agro-and fishery processing industry.

3. Diversification of industrial structure

   1) Development of industries of high added value, e.g., agro-based and processing industries.

   2) Development of consumer oriented industries.

   3) Development of resource-based industries.

   4) Promotion of tourism and other tertiary industries.

4. Development strategies recommended to Bohol

   1) Amelioration before the year 2000 of income disparity existing between Cebu and Bohol provinces.

   2) Annual growth rates targeted for the Bohol economy.

1980 - 1985:	4.5%
1985 - 1990:	6.0%
1990 - 2000:	9.0%

3) For the first stage emphasis being placed upon the development of agro-related industries and social capital improvement.

4) Creation of employment opportunities

5) Improvement of supporting infrastructure and social services.

5. Targets for production increase of economic sector 1980 - 1990

1)	Agriculture	4.5%
2)	Fishery	4.5%
3)	Manufacturing	5.5 - 8.7%
4)	Tertiary	5.1 - 8.8%

7.1.2 Purposes and Nature of Part II: Sectoral Development Programs and Projects

The Primary objectives of Part Two are to identify and formulate "high impact programs/projects" of the major sectors and sub-sectors which will bring about tangible effects to the Bohol economy. The reasons why the development of high impact programs/projects are taken up as the major objectives of Part Two are as follows:

1) A large number of the development plans have already been drawn up for the Bohol province, and yet no significant steps have been taken.

2) What is needed most for Bohol is the implementation of the programs/projects of high priorities which could easily be carried out within a short span of time, if sufficient funding was made available to Bohol either from domestic sources or from foreign lending sources.

3) A long range and comprehensive development plan requires a long period of primary data generation, analysis and projection, and inter-sectoral development plans. If is our judgement that writing this type of a long range plan is not only premature but also fruitless unless immediate steps are taken promptly.

In the light of the urgent action requirements existing in Bohol, the "high impact programs/projects" concerning the major sectors and sub-sectors of strategic importance for the Bohol economy are to be identified. The selected sectors and sub-sectors are as follows:

(a) Economic Sector

- Agricultural and Livestock Industry	(Chapter 8)
- Forestry	(Chapter 9)
- Fishery Industry	(Chapter 10)
- Mining and Manufacturing Industry	(Chapter 11)
- Tourism	(Chapter 12)

(b) Infrastructure Sector

- Water Resources Management (Chapter 13)
- Transportation System (Chapter 14)
- Energy (Chapter 15)
- Communication (Chapter 16)

(c) Social Services Sector

- Public Health (Chapter 17)
- Community Development (Chapter 18)
- Human Resources and Education (Chapter 19)
- Housing (Chapter 20)

These programs/projects identified as "high impact" will be integrated with each other and their implementation plan and schedule will be recommended in Part Three, Integrated Area Development Plan of Programs and Projects.

7.1.3 Outline of Approach

The high impact programs/projects are to be outlined according to the following general topics:

- Analysis of the current problems and trends - identification of problem-structure.
- Assessment of development potentials.
- Setting of objectives and targets.
- Development strategies.
- Formulation of development programs.
- Identification of high impact projects.
- Implementation plan.

Depending upon the nature of sector or sub-sector, an adherence to this "modus operandi" may not be strictly observed. A set of policy recommendations only will be made particularly to the problem areas where high impact programs/projects cannot be found.

In order to clarify the type of method used for development planning in this paper, brief explanations are provided in sections 7.2 and 7.3. In addition, a summary description is made in section 7.4 on the current status of regional development planning which is directly related to Bohol.

7.2 Methods of Integrated Area Development Planning

7.2.1 Background

During the last decades the sectoral approach has been widely used for regional development planning in the developing as well as developed countries. The major drawbacks of this approach has been lack of vertical and horizontal coordination and integration of development efforts. This is the main reason why development policy planners have been advocating in recent years the "comprehensive and integrated area development" approach. This approach is defined as "a coordinated and integrated approach" to regional development plan which is to be drawn up for a circumscribed geographic area. As a method of planning strategies, this approach attempts to relate various development sectors into a coherent development framework and to enroll various disciplines needed in task for producing an integrated area development plan. Considerable progress has already been made in the development of planning concepts, methods and strategies bringing together various sectoral approaches and interdisciplinary techniques.[1)]

In keeping with the recent trend and need for the integrated area development plan, a series of the comprehensive regional development plans have been formulated for various regions in the Republic of the Philippines. Some of the notable examples are; the Mindoro Integrated Rural Development Project, the Bicol River Project, the Samar Integrated Rural Development Project, and the Palawan Integrated Area Development Project. It must be noted that the Bohol Integrated Area Development Project (BIADP) should also be understood as a similar attempt being made for the Province of Bohol by JICA.

7.2.2 A General Framework of Regional Development Plan

Any regional development plan will comprise the policy consideration of two sets of problems, viz., 1) what kind of development goals should be set forth for a given geographical area, and 2) what kind of resources could be mobilized for achieving the goals. The development goals can be broken down to various sub-goals such as:

- Attainment of the economic viability of the area
- Satisfaction of basic human needs or social amenity level
- Social-political acceptability.

Similarly, the resources available in the given area should be singled out according to their potential role of contribution. These are, inter alia,;

- Natural resources and constraints
- Type and volume of manpower availability
- Financial resources
- Institutional set up

- Level of technological development

The purpose of a regional development plan is to formulate a set of methods, strategies and framework whereby the prescribed development goals will be optimally achieved through combining different resources available to the area in question.

7.2.3 Steps of Conprehensive Regional Development Plan

A comprehensive or integrated area development plan is a type of regional development plan in which important sectoral and sub-sectoral plans, programs/projects are all integrated and coordinated within a coherent framework of the development strategy. As indicated in Figure 7-1, the comprehensive regional development plan will usually require eight consecutive steps of analysis; they are:

Step 1: Situation Analysis
Step 2: Analysis of Development Potentials
Step 3: Macro Framework Building
Step 4: Goal Setting and Sectoral Planning
Step 5: Inter-Sectoral and Spatial Coordination
Step 6: Formulation of Development Strategies
Step 7: Formulation of Development Programs and Projects
Step 8: Implementation Policy and Strategy

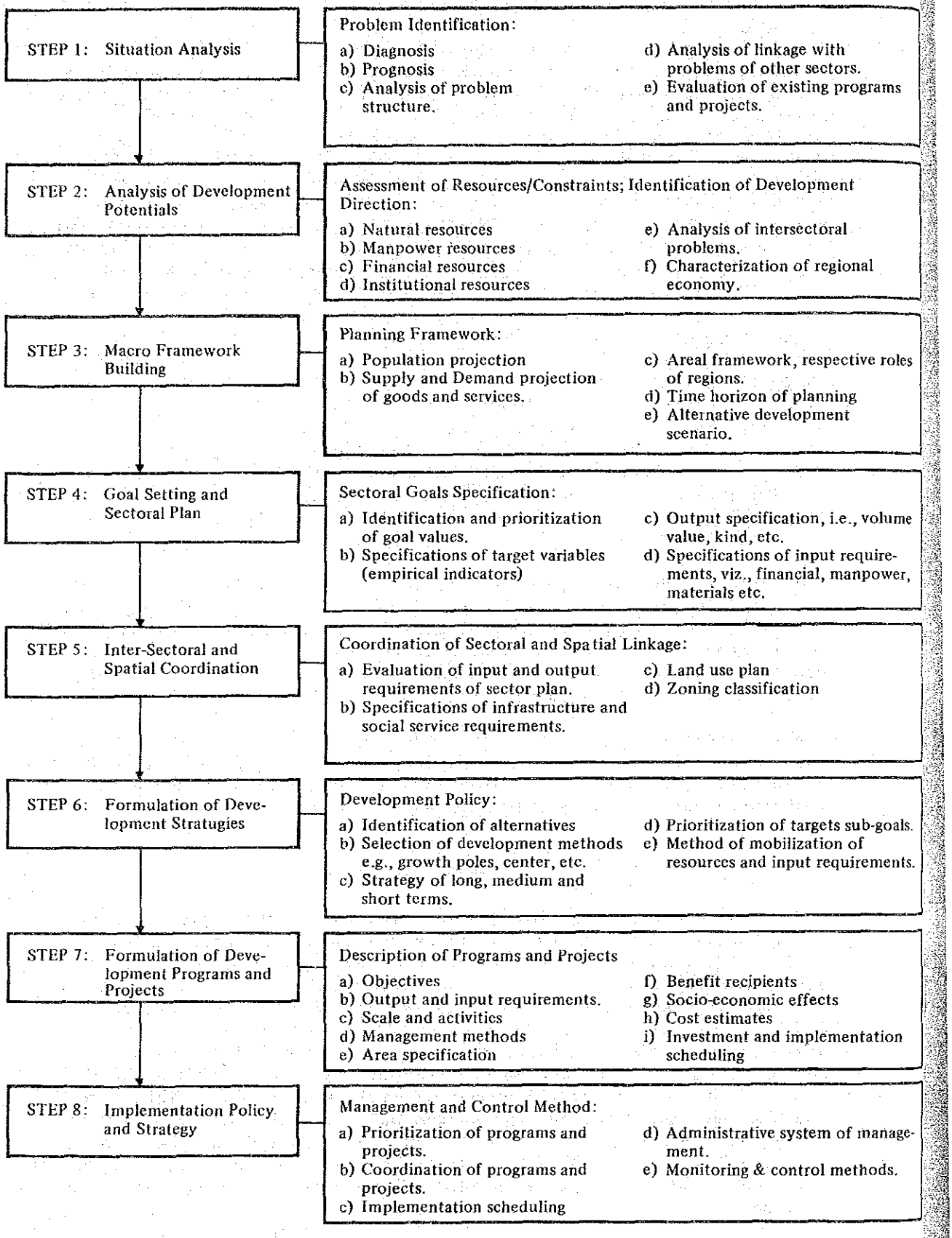
Each step will consist of necessary component activities, e.g., description, analysis, explanation, projection, etc. Depending upon the policy planner's objectives or stages of the development, a regional development plan can be formulated to concern selected aspects of the problem area; e.g., goal setting and sectoral plan, or analysis of development potentials, etc.

Central Visayas (Region VII) Five Year Development Plan (1978 - 1982) can be characterized as the type of regional planning which is concerned primarily with the goal-setting and sectoral plan and with the formulation of development strategies.

7.2.4 Top Down and Bottom Up Approach

The top down approach has often been used in the developing countries owing to the following reasons: 1) centralism in decision making, 2) lack of financial and manpower resources at the local level, 3) growth pole approach required for a national economic development and 4) need for a coherent national development policy. However, the drawbacks of the "top down" approach have become increasingly recognized by the policy planners of various countries. As a result, serious attempts have been made in recent years to alleviate the defects of the centralistic approach of regional planning. This recent trend is generally called the "bottom up" approach. Although a variety of regional development plans drawn up in the past were likely to rest upon the "top down" approach, the regional development policy currently stressed in the Philippines is said to be in line with the bottom up approach.

Fig. 7.1 STEPS OF COMPREHENSIVE REGIONAL DEVELOPMENT PLANNING



The concept of Integrated Area Development (IAD) is a notable example of the "bottom up" approach. However, one must be aware of the possible merits and demerits which may be derived from these two types of approaches. They are shown in Table 7-1.

7.2.5 Types and Functions of Regional Development Plan

It must be also noted that a regional development plan may be designed to serve different purposes according to the specific needs of development policy planners. In terms of the purposes or functions designed to serve, the regional development plan can be classified into the following types.

1. Perspective Plan

   A chief objective of the plan lies in the creation of a long term development vision for a given geographical area. The time horizon often used is usually longer than ten years. This type of planning need frequently arises when policy planners wish to identify alternative goals or direction of a region or area. It should be properly called a "perspective plan" which is less rigorous in the method used and characterized by its reliance upon the "scenario writing" method.

2. Contextual Plan

   A primary objective of the plan is to formulate a regional development framework within which a variety of programs and/or projects, existing or proposed, will be evaluated and prioritized. This type of planning frequently arises in the case where a large number of development programs and/or projects are planned and being executed by different implementing agencies resulting in the lack of inter-sectoral coordination.

3. Comprehensive Plan

   This is a type of regional development plan which is intended to be an integrated area development plan for a given area. It tries to encompass all kinds of problems involved in the socio-economic development of the area. The major features of this approach are, inter alia, 1) the major components of planning units such as programs and projects are integrated, horizontally and vertically, comprising a total system designed to achieve the development objectives; 2) the goal-oriented policy actions, guidelines or strategies are clearly indicated in terms of the period of time required, viz., short, medium and long terms; and 3) the rigorous formulation requires an interdisciplinary approach and very sophisticated tools and skills.

Each of these types of regional development plan can be conceived as a "characteristic paradigm" or "prototype" of the plans which have been frequently used in developing as well as developed countries. However, it has been the case that their practical application proved that they do not bring about tangible effects or benefits to the area concerned.

Table 7-1 Method of Comprehensive Area Development Plan

Type of Method	Characteristics	Merits and Demerits
Top-Down Approach	a) Area development goals and strategies are formulated within a macro socioeconomic framework. b) Centralist in policy-making, target planning and control. c) Area development goals are defined in terms of hierarchial order of national and regional goals. d) Functional definitions and allocation of regional and area economies are made in accordance with national economic needs of development. e) Regional and area division of labor are clearly defined, etc.	MERITS a) Optimal allocation of economic resources. b) Full consideration of comparative advantage of economies. c) Inter-sectoral and spatial coordination. d) Full consideration of agglomeration economy. DEMERITS a) Disregard of local needs and demands. b) Lack of local participation. c) Difficulty in monitoring and controlling implementation. d) Insufficient understanding of of local problems. e) Lack of opportunity for local planners in developing their capabilities, etc.
Bottom-Up Approach	a) Real problems of locality are first diagnosed. b) Resource base of the area is clearly defined. c) Goal variables and st strategies are aggregated and augmented to a regional level. d) Planning power is decentralized. e) Problem-solving and action oriented planning is stressed. f) A relatively short time horizon is used in planning, etc.	MERITS a) Real reflection of local needs, demands and wishes. b) Improvement of local planners' capabilities. c) Recognition of social capital improvements. d) Implementation being easily monitored and controlled, etc. DEMERITS a) Likely to be short-sighted. b) Neglect of optimal allocation of economic resources. c) Manifestation of local ego. d) Unrealistic planning. e) Lack of resources, e.g. financial, manpower, natural resources.

Their failure may for example be due to the following; 1) the plan was not based upon reliable estimates of funding resources, 2) the assumptions became invalidated because of the changes in exogenous factors, 3) programs/projects were not identified or formulated to be specific enough to be implemented; and 4) the implementing agencies were found to be in short of the technical personnel or power of inter-agency coordination, etc.

It is advised that the policy planners in Bohol should take cognizance of what kind of regional planning is most suitable to their policy objectives and why some of the previously written plans have never worked out as they were intended. The policy planners of Bohol should have foresight and full understanding of all these problems. For reference purposes, some of the salient features of the different kinds of regional development plan is shown in Table 7-2.